

ANIMAL BIOGRAPHY,

OR,

POPULAR ZOOLOGY;

ILLUSTRATED BY

AUTHENTIC ANECDOTES

OF

THE ECONOMY, HABITS OF LIFE, INSTINCTS, AND SAGACITY,

OF THE

Animal Creation.

BY THE

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ANIMAL BIOGRAPHY

Glires*.

OF THE PORCUPINES IN GENERAL†.

To a superficial observer, the animals belonging to this tribe would seem entitled to a place with the Hedgehogs; but they have no further similitude to these, than in the spiny covering of their bodies. None of the species are supposed to be carnivorous.

THE COMMON PORCUPINE‡.

The strong and sharp spines with which the upper parts of the body of the Porcupine are covered, and which measure from nine to fifteen inches in length, are

In this order the animals are furnished with two remarkably large and long front teeth in each jaw; but have no canine teeth. Their feet have claws, and are formed both for bounding and running.

† The Porcupines have two front teeth, cut obliquely, in each jaw; and eight grinders. They have four toes on the fore, and five on the hinder feet; and the body is covered with spines intermixed with hair.

‡ See Plate vi. Fig. 5.

DESCRIPTION. The general length of the Porcupine is about two feet from the head to the extremity of the tail. The upper parts of the body are covered with strong spines, each of which is variegated with black and white rings. The head, belly, and legs are covered with strong dusky bristles, intermixed with softer hairs: on the top of the head, these are very long, and curved backward, somewhat like a crest.

SYNONYMS. *Hystrix cristata*. Linn.—Crested Porcupine. Pennant.—Porc-epic. Buffon.—Shaw's Gen. Zool. Pl. 122.—Bew. Quag. 180.

complete quills, and want only the vane to constitute real feathers. The animal has the power of elevating or depressing them at will; and when he walks they make a rattling noise by striking against each other.

Whenever these animals are irritated or offended, they stamp forcibly on the ground with their hind feet, somewhat in the manner of rabbits. In this act they shake all their quills, but more particularly those about the tail; and at the same time they exert their voice, which is a kind of grunting noise.*

It has been asserted by credulous travellers, that Porcupines, when provoked, dart their quills at the object of their rage. This opinion, however, has been fully refuted by many accurate naturalists, who have taken pains to enquire into the matter. The usual method of defence adopted by these animals, is to recline on one side; and, at the approach of their enemy, to rise up quickly and gore him with the erected prickles of the opposite side*. It is also stated, that, when the Porcupine meets with serpents, against which he carries on a perpetual war, he closes himself up like a ball, concealing his head and feet, and then rolls upon and kills them with his bristles, without running any risk of being wounded himself. M. Le Vaillant says, that, owing to some pernicious quality in the quills, one of his Hottentots, who had received a wound in the leg from a Porcupine, was ill for upwards of six months. He also informs us, that a gentleman at the Cape of Good Hope, in teasing one of these animals, received a wound in the leg, which nearly occasioned the loss of his limb; and notwithstanding every possible care, he suffered severely from it for more than four months, during one of which he was confined to his bed. When the Porcupine casts its quills, it sometimes shakes

* The keeper of the animals in the Tower informed me, that whenever a Porcupine attempts to injure any person who disturbs him in his cage, he turns round and runs backward upon the intruder.

them off with so much force, that they fly to the distance of a few yards, and even bend their points against any hard substance they happen to strike. It may have been this circumstance which gave rise to the report of the Porcupine darting its quills against an enemy.

This animal is a native of Africa, India, and the Indian Islands; and is said sometimes to be found even in Italy and Sicily. It inhabits subterraneous retreats, which it forms into several compartments; leaving two holes, one for an entrance, and the other, in case of necessity, to retreat by. It sleeps during the day, and makes its excursions for food (which consists principally of fruits, roots, and vegetables) in the night. Although able to support hunger for a great length of time, and apparently without inconvenience, it always eats with a voracious appetite. In the gardens near the Cape of Good Hope, these creatures do much damage. When they have once made a path through a fence, they always enter by the same path, so long as it continues open; and this gives the inhabitants an opportunity of destroying them. When a breach is discovered, they place a loaded gun in such a manner that the muzzle will be near the animal's breast, when he is devouring a carrot or turnip that is connected by a string with the trigger.

In its manners the Porcupine is harmless and inoffensive. It is never the aggressor, and, when pursued, it climbs the first tree it can reach, where it remains till the patience of its adversary is exhausted. If, however, it be roused to self-defence, even the lion dares not venture to attack it.

In confinement, none of these animals appear to have any particular attachment to their keeper. They will eat bread or roots out of his hand, or suffer him to lead them about by a string fastened to their collar. One that was exhibited in the Tower of London some years ago, would even allow its keeper to take it up under his arm: but to do this without wounding himself with its

spines, required considerable dexterity, since it was first necessary to close these to the animal's body, by sweeping his arm along the direction in which they grew.

Porcupines usually sleep in the day-time, and become awake and active towards evening. Their teeth are peculiarly sharp and strong; and they gnaw the wood-work of their dens so much, that if there was not much iron about the sides and corners, they would soon escape. M. Bosman, when on the coast of Guinea, put a Porcupine into a strong tub, in order to secure him; but, in the course of one night, he ate his way through the staves, even in a place where they were considerably bent outward, and escaped.

The late Sir Ashton Lever had a live Porcupine, which he frequently turned out on the grass behind his house, to play with a tame hunting leopard and a large Newfoundland dog. As soon as they were let loose, the leopard and dog began to pursue the Porcupine, which always at first endeavoured to escape by flight; but, on finding that ineffectual, he would thrust his head into some corner, making a snorting noise, and erecting his spines. With these his pursuers pricked their noses, till they quarrelled between themselves, and thus gave him an opportunity to escape.

The period of gestation in the female is about seven months, at the end of which time she produces one or two young-ones at a birth, which she suckles about a month. These she defends with the utmost resolution against all assailants, and she will rather be killed than suffer herself to be deprived of them.

In the stomach of the Porcupine, bezoar stones are frequently found. These are composed of hair, which has concreted with the juices of the stomach: they have one layer over another, so that they consist of several rings of different colours. Professor Thunberg says, he has seen them as large as a hen's egg.

The quills of the Porcupine are used by the Indians to adorn many curious articles of dress and furniture; the neatness and elegance of which would not disgrace

more enlightened artists. These people dye them of various beautiful colours, cut them into slips, and embroider with them their baskets, belts, &c. in a great variety of ornamental figures. The flesh is frequently eaten by the inhabitants of the Cape of Good Hope.

OF THE CAVY TRIBE*.

These animals seem to hold a middle place between the murine quadrupeds and the hares. Nearly all the species, which are *seven* in number, have a *slow*, and some of them a *leaping* pace. Their habitations are burrows, which they form beneath the roots of trees, or in the ground. They live entirely on vegetable food, and are all natives of America: two or three of the species, however, are found also on the Old Continent.

THE GUINEA-PIG, OR RESTLESS CAVY†.

There are few foreign quadrupeds more generally known than this. It is a native of Brasil and of some other parts of South America, but is supposed to have originally been imported from Guinea into England. In a state of domestication it feeds on bread or grain, fruit and vegetables; but it has a decided preference for parsley. This little creature is easily rendered tame, and is very cleanly and harmless. In its disposition it is timid; and it appears totally void of attachment, not only to its benefactors, but even towards its own offspring: these it will suffer to be taken away, and even devoured, without discovering the least concern, or attempting any resistance.

* The Cavies have, in each jaw, two wedge-shaped front teeth, and eight grinders. They have likewise four or five toes on the fore feet, and from three to five on the hinder feet. The tail is either very short, or altogether wanting; and they have no collar-bones.

† SYNONYMS. *Cavia Cobaya*. *Linnaeus*. *Gmel.*—*Mus porcellus*. *Linn. Syst. Nat. ed. xii.*—*Cochon d'Inde*. *Buffon.*—*Shaw's Gen. Zool. Pl. 126.*—*Bew. Quad. 377.*

When kept in a room, it seldom crosses the floor, but generally creeps round by the wall. Its motions are, in a great measure, similar to those of the rabbit: it strokes its head with its fore feet, and sits on its hind legs, like that animal. The male usually compels the female to go before him, and follows exactly in her footsteps. These animals are fond of dark and intricate retreats, and seldom venture out if danger be near. When about to quit their hiding-places, they spring forward to the entrance, stop to listen, and look round; and if the road be clear, they sallify forth in search of food; but on the least alarm they run instantly back again.

In their habits they are so exceedingly clean, that if their young-ones happen to be dirtied, the female takes such a dislike to them, as never again to suffer them to approach her. Guinea-pigs may frequently be observed in the act of smoothing and dressing their fur, somewhat in the manner of a cat. The principal employment of the male and female seems to consist in smoothing each other's hair; after this office has been mutually performed, they turn their attention to their young-ones, whose hair they take particular care to keep unruffled and even; and they bite them whenever they are in the least refractory. •

They repose flat on their belly; and, like the dog, turn several times round before they lie down. They sleep with their eyes half open, and are very watchful. It is observed that the male and female seldom sleep at the same time, but seem alternately to watch each other. They are exceedingly delicate, and impatient of cold or moisture. Their usual voice is a kind of grunting, like that of a young pig; but their notes of pain are shrill and piercing.

Their manner of fighting is singular. One of them seizes the neck of its antagonist with its teeth, and attempts to tear the hair from it. In the mean time, the other turns his posteriors to his enemy, kicks up behind like a horse, and, by way of retaliation, scratches the

sides of his opponent with his hinder claws, in such a manner that both are frequently covered with blood.

The female goes with young about five weeks, and breeds nearly every two months. Though furnished with only two teats, she usually produces three or four, and sometimes so many as twelve young-ones, at a birth. And as these have been known to breed when only two months old, the produce of a single pair may amount to upwards of a *thousand* in the year.

OF THE BEAVER TRIBE*.

Belonging to the present tribe, there are but *two* species that have hitherto been discovered, the Common and the Chili Beavers; and even of these, it seems doubtful whether the latter ought not to be arranged with the Otters.

THE COMMON BEAVER†.

There is reason to suppose that this animal was once an inhabitant of great Britain; for Giraldus Cambrensis says, that Beavers frequented the river Tievi in Cardiganshire, and that they had; from the Welsh, a name signifying “the Broad-tailed animals.” Their skins

The Beavers have the front teeth in their upper jaw truncated, and excavated with a transverse angle; and those of the lower jaw are transverse at the tips. There are four grinders on each side. The tail is long, depressed, and scaly; and there are collar-bones in the skeleton.

† DESCRIPTION. The general length of the Beaver is about three feet. The tail is oval, nearly a foot long, and compressed horizontally, but rising into a convexity on its upper surface: it is destitute of hair, except at the base, and is marked into scaly divisions, like the skin of a fish. The hair of the Beaver is fine, smooth, glossy, and of a chesnut colour, varying sometimes to black; and instances have occurred in which these animals have been found white, cream-coloured, or spotted. The ears are short, and almost hidden in the fur.

SYNONYMS. Castor Fiber. *Linnaeus*.—Castor. *Buffon*.—*Shaw's Gen. Zool. Pl.* 128.—*Bew. Quad.* 417.

were valued by the Welsh laws, in the tenth century, at the enormous sum of a hundred and twenty pence each; and they seem to have constituted the chief finery and luxury of those days. Beavers are at present natives of most of the northern parts of Europe and Asia, but are principally found in North America.

No other quadrupeds seem to possess so great a degree of natural sagacity as these. Yet when we consider that their history, as hitherto detailed, has been principally taken from the reports of the Beaver-hunters, whose object it is, not to study the nature or manners of the animals, but merely to seize upon them as articles of commerce, and whose accounts are often in themselves contradictory, it is necessary that we should not give implicit faith to every thing that has been written, even by the most respectable authors, concerning them, where these authors have not themselves witnessed the facts they relate. Captain George Cartwright, who resided fourteen years on the coast of Labrador, in order to collect the different furs of that dreary climate, saw more of the manners of the Beaver, than most other writers. To this work, therefore, and to that of M. du Pratz, who, in Louisiana, was an eye-witness to their labours, I have principally had recourse, in endeavouring to give to the reader as faithful an account as possible of the habits of life and economy of these wonderful animals.

Beavers generally live in associated communities, consisting of as many as two or three hundred individuals; and they inhabit extensive dwellings, which they raise to the height of six or eight feet above the surface of the water. They select, if possible, a large pond; in which they raise their houses on piles, forming them either of a circular or oval shape, with arched tops, and thus giving them, on the outside, the appearance of a dome, while within they somewhat resemble an oven. The number of houses is, in general, from ten to thirty. If the animals cannot find a pond to their liking, they fix on some flat piece of ground, with a stream running

through it; and in making this a suitable place for their habitations, a degree of sagacity and intelligence, of intention and memory, is exhibited, which approaches, in an extraordinary degree, to the faculties of the human race.

Their first object is, to form a dam. To do this, it is necessary that they should stop the stream, and of course that they should know in which direction the water runs. This seems a very wonderful exertion of instinct; for they always do it in the most favourable place for their purpose, and never begin at a wrong part. They drive stakes, five or six feet long, into the ground, in different rows, and interweave them with branches of trees; filling them up with clay, stones, and sand, which they ram so firmly down, that though the dams are frequently a hundred feet long, Captain Cartwright says, he has walked over them with the greatest safety. These are ten or twelve feet thick at the base, and gradually diminish towards the top, which is seldom more than two or three feet across. They are exactly level from end to end; perpendicular towards the stream; and sloped on the outside, where grass soon grows, and renders the earth more united.

The houses are constructed, with the utmost ingenuity, of earth, stones, and sticks, cemented together, and plastered in the inside with surprising neatness. The walls are about two feet thick; and the floors so much higher than the surface of the water, as always to prevent them from being flooded. Some of the houses have only one floor; others have three. The number of Beavers in each house is from two to thirty. These sleep on the floor, which is strewn with leaves and moss; and each individual is said to have its own place. When they form a new settlement, the animals begin to build their houses in the summer; and it costs them a whole season to finish the work, and lay in their winter provisions: these consist principally of bark and the

tender branches of trees, cut into certain lengths, and piled in heaps under the water.

The houses have each no more than one opening, which is under the surface of the water, and always below the thickness of the ice. By this means they are secured from the effects of frost.

The Beavers seldom quit their residence unless they are disturbed, or their provisions fail. When they have continued in the same place three or four years, they frequently erect a new house annually; but sometimes merely repair their old one. It often happens that they build a new house so close to their former dwelling, that they cut a communication from one to the other; and this may have given rise to the idea of their having several apartments.

During the summer-time, they quit their houses, and ramble about from place to place, sleeping under the covert of bushes, near the water-side. On the least noise, they betake themselves into the water for security; and they have sentinels, who, by a certain cry, give notice of the approach of danger. In the winter they never stir out, except to their magazines under the water; and during that season they become excessively fat.

In one of his excursions into the northern parts of Louisiana, M. du Pratz (who resided sixteen years in that country) gives us an account of a colony of Beavers, to many of whose operations he was himself a witness. But this, in some respects, appears contradictory to the account of Captain Cartwright.

At the head of one of the rivers of Louisiana, in a very retired place, M. du Pratz found a beaver-dam. Not far from it, but hidden from the sight of the animals, he and his companions erected a hut, in order to watch the operations of these animals at leisure. They waited till the moon shone bright; and then, carrying in their hands branches of trees, in order to conceal themselves, they went with great care and silence to the dam. M. du Pratz ordered one of the men to

cut, as silently as possible, a gutter, about a foot wide, through it; and to retire immediately to the hiding-place.

“As soon as the water through the gutter began to make a noise (says this writer) we heard a Beaver come from one of the huts and plunge in. We saw him get upon the bank, and clearly perceived that he examined it. He then, with all his force, gave four distinct blows with his tail; when immediately the whole colony threw themselves into the water, and went to the dam. As soon as they were assembled, one of them appeared, by muttering, to issue some kind of orders; for they all instantly left the place, and went out on the banks of the pond in different directions. Those nearest to us were between our station and the dam, and therefore we could observe their operations very plainly. Some of them formed a substance resembling a kind of mortar; others carried this on their tails, which served as sledges for the purpose. I observed that they ranged themselves two and two, and that each animal of every couple loaded his fellow. They trailed the mortar, which was pretty stiff, quite to the dam, where others were stationed to take it; these put it into the gutter, and rammed it down with blows of their tails.

“The noise of the water soon ceased, and the breach was completely repaired. One of the Beavers then struck two blows with his tail; and instantly they all took to the water without any noise, and disappeared.”

M. du Pratz and his companions afterwards retired to their hut to rest, and did not again disturb the animals till the next day. In the morning, however, they went to the dam, to see its construction; for which purpose it was necessary that they should cut part of it down. The depression of the water in consequence of this, together with the noise they made, roused the Beavers again. The animals seemed much agitated; and one of them, in particular, was observed several times to approach the labourers, as if to examine what passed. As M. du Pratz apprehended that they might run into

the woods, if further disturbed, he advised his companions again to conceal themselves.

“ One of the Beavers (continues our narrator) then ventured to go upon the breach, after having several times approached and returned like a spy. He surveyed the place, and struck four blows, as he had done the preceding evening, with his tail. One of those that were going to work, passed close by me ; and as I wanted a specimen to examine, I shot him. The noise of the gun made all the rest scamper off with greater speed than a hundred blows of the tail of the overseer could have done.” By firing at them several times afterwards, the animals were compelled to run with precipitation into the woods. M. du Pratz then examined their habitations.

Under one of the houses he found fifteen pieces of wood, with the bark in part gnawed off, apparently intended for food. And, round the middle of this house, which formed a passage for the Beavers to go in and out at, he observed no fewer than fifteen different cells.

Beavers produce their young-ones towards the end of June; and generally have two at a time. These continue with their parents till they are three years old, when they pair off, and form houses for themselves. If, however, they are undisturbed, and have plenty of provisions, they remain with the old ones, and thus form a double society.

Instances have occurred of Beavers having been domesticated. Major Roderfort, of New York, related to Professor Kalm, that, for a year and a half, he had in his house a tame Beaver, which was suffered to run about like a dog. The Major gave him bread ; and sometimes fish, of which he was very greedy. As much water was put into a bowl as he wanted. All the rags and soft things he could lay hold of, he dragged into the corner where he was accustomed to sleep, and made a bed of them. The cat in the house, having kittens, took possession of his bed ; and he did not

attempt to interrupt her. When the cat went out, the Beaver often took one of the kittens between his paws, and held it to his breast to warm it, and seemed to dote upon it: as soon as the cat returned, he always restored to her the kitten. Sometimes he grumbled; but never attempted to bite.

In the year 1820, there were in the upper room at Exeter 'Change, London, two Beavers, which had been there some time. They were very tame, and would suffer themselves to be handled by the visitors; but most persons were alarmed, on approaching them, by the animals uttering their weak and plaintive cry. This noise they also frequently emitted during their play with each other. At times they were exceedingly gay and frolicsome, wrestling and playing with each other, as far as the limits of their small apartment would admit. They often sat upright to look about them, or to eat; and, if any thing movable was given them to play with, they would drag it about, and seem highly pleased with it. They were in no instance observed to drag any thing about on their tails, or to make any attempts to do so. In all their manners these animals were extremely cleanly. They were fed with the bark of trees, and on bread; and such was their propensity to gnaw wood, that it was not considered safe, notwithstanding the natural gentleness of their disposition, to allow them the full range of a room, for they would soon have eaten their way out, and escaped.

The skin of the Beaver has hair of two kinds: that immediately next to the skin, is short, implicated together, and as fine as down: the upper hair grows more sparingly, and is both thicker and longer. The former is of little value; but the flax or down is wrought into hats, stockings, caps, and other articles of dress.

The skins of Beavers form a considerable article of traffic, both with the northern countries of Europe and with America. About fifty-four thousand have been sold by the Hudson's Bay Company at one sale: and in the year 1798, one hundred and six thousand skins

were collected in Canada, and sent into Europe and China. Those of a black colour are preferred, particularly such as are taken during winter.

The medicinal substance called *castor* is produced in what are called the inguinal glands of these animals; and each individual, both male and female, has usually about two ounces. That produced by the Russian Beavers is more valuable, and sells at a much higher price than what is imported from America. The flesh is good eating.

It frequently happens that single Beavers live separately from the general community, in holes, which they make in the banks of rivers, considerably under the surface of the water, working their way upward to the height of many feet. These are called by the hunters *Hermits* or *Terrier Beavers*. Like the rest, they lay up a store of provisions for the winter. It is supposed by Captain Cartwright, that their separation from society originates in attachment and fidelity; that, having by some accident lost their mate, they will not readily pair again. Whatever may be the causes, it has been remarked, that they have invariably a black mark on the skin of their backs; this is called a saddle, and by it they are easily distinguished from the others.

OF THE RAT TRIBE*.

This tribe contains all those animals which have the appellation of Murine Quadrupeds; and although the term Rat has been adopted, it includes not only the species that we know by the peculiar name of Rats, but also the Mice, and others called Beaver-rats.

These animals, in general, live in holes in the ground; and are very swift, and able to climb trees.

* The front teeth are wedged-shaped. There are generally three grinders on each side, but sometimes only two. All the species have clavicles, or collar-bones, in the skeleton.

Their food is chiefly vegetable; which most of them seek in the night, keeping in their retreats during the day. They feed in a somewhat upright position, carrying the food to their mouth in their fore paws. They are very prolific.

THE MUSK-RAT*.

In the general form of their body, as well as in many of their habits of life, the Musk-rats have a considerable resemblance to the Beaver. They construct their habitation of dry plants, but particularly of reeds, cement it with clay, and cover it with a dome. At the bottom and sides of this there are several pipes, through which they pass in search of food; for they lay up no provisions for winter. They have also subterraneous passages, into which they retreat whenever their houses are attacked.

Their habitations, which are intended only for use in the winter, are rebuilt annually. At the approach of this season they begin to construct them, as places of retirement from the inclemencies of the weather. Several families occupy the same dwelling, which is frequently covered many feet deep with snow and ice: the animals, notwithstanding, contrive to creep out, and feed on the roots that are also buried beneath. They

* DESCRIPTION. This animal is about the size of a small rabbit. Its head is thick and short, and somewhat resembles that of the Water-rat. The eyes are large; the ears short, rounded, and covered both inside and outside with hair. Its fur is soft, glossy, and of a reddish-brown colour; and beneath this there is a thick down. The tail is flattened laterally, and covered with scales.

The Musk-rat is a native of nearly all parts of America, from Hudson's Bay as far south as Carolina.

SYNONYMS. *Mus Zibethicus*. Linn. Gmel.—*Castor Zibethicus*. Linn. ed. xii.—*Ondatra*, or Canadian Musk-rat. Sm. Buff.—Musk-beaver. Penn.—Shaw's Gen. Zool. Pl. 129.—Bew. Quad. 415.

feed also on fresh-water muscles; and, when the season permits it, on fruit. Kalm, in his *American Travels*, says that apples are used in traps as baits for them. In winter, the male and female are seldom seen apart from each other. During the summer these animals wander about, generally in pairs, and feed voraciously on herbs and roots.

The Musk-rats, as well as the Beavers, seem to have their drones or terriers, which are at no trouble in the common operation of building houses. They are remarkable for a strong musky smell: whence they have their specific name. Their nests are formed of sticks, and lined on the inside with some soft materials; and the females produce from three to six young-ones at a birth. When taken young, they are easily tamed; they are then very playful and inoffensive, and never bite.

The flesh of Musk-rats is sometimes eaten; and the fur is used in the manufacture of hats.

THE BROWN RAT*, AND BLACK RAT†.

The Brown and the Black Rat are both, of them species much too well known in most countries where they are found. The former, which was first introduced among us from Norway, has greatly diminished the number of the others; but has itself multiplied so excessively, and is so strong and voracious, as to form no very acceptable substitute.

In Ireland the Brown Rats have nearly destroyed even the whole race of frogs; which the inhabitants were somewhat anxious to preserve, in order to clear

SYNONYMS. *Mus decumanus*. Linn.—Le Surmulot. Buffon.—Norway Rat. Penn.—Bingley's *Mém. of Brit. Quad.* Pl. 24.

† SYNONYMS. *Mus rattus*. Linn.—Le Rat. Buffon.—Bingley's *Memoirs of Brit. Quadrupeds*, Pl. 25.

their fields of insects, and render their waters more healthful. While the frogs continued in great numbers, the Rats also multiplied; but since the latter are deprived of this considerable part of their subsistence, they also are become much less numerous.

During summer, the Brown Rats reside chiefly in holes within the banks of rivers, ditches, and ponds; but, at the approach of winter, they come to the farm-houses, and enter the corn-ricks and barns, where they devour much of the corn, but damage infinitely more than they eat. They chiefly reside in the walls and about the floors of old houses: here they frequently destroy the furniture; and they have even been known to gnaw the extremities of infants while asleep. They are also excessively destructive to eggs, poultry, pigeons, rabbits, and game of every description. They swim with ease, and even dive in pursuit of fish.

Their produce is enormous; as they bring from ten to twenty young-ones at a litter, and this thrice a-year. Thus, their increase is such, that it is possible for the descendants of a single pair (supposing food to be sufficiently plentiful, and that they had no enemies to lessen their numbers) to amount, at the end of about two years, to upwards of *a million*. But this baneful increase is counteracted, not only by numerous enemies among other animals, but by their destroying and eating each other. A large and strong Rat is as much dreaded by its own species, as the whole species is dreaded by other creatures that are their prey. Thus has Providence kindly interfered in keeping them within due bounds.

Dogs and cats destroy, but do not eat them. The weasel is in perpetual enmity with them; and will pursue them into their holes, and fight with them there. This little creature endeavours to fix itself on their bodies, and suck their blood; which it very often effects.

In the Isle of France, Rats are found in such prodigious swarms, that it is said the place was abandoned by the Dutch on account of their number. In some

of the houses they are so numerous, that 30,000 have been known to be killed in a year. They make immense hoards underground, both of corn and fruit; and climb up trees to devour young birds. They pierce the very thickest rafters. At sun-set they may be seen running about in all directions; and in a single night they will frequently destroy a whole crop of corn. M. de St. Pierre says, he has seen a field of maize, in which they had not left a single ear. They are supposed to have been originally brought to that island in some of the European vessels.

On the return of the Valiant man of war from the Havannah, in the year 1766, its Rats had increased to such a degree, that they destroyed a hundred-weight of biscuit daily. The ship was at length smoked between decks, in order to suffocate them. This had the desired effect; and six hampers were, for some time, filled every day with the Rats that had thus been killed.

In Egypt, as soon as the Nile, after having fertilized the land, leaves it free for cultivation, multitudes of Rats and mice are seen to issue in succession from the moistened soil. The Egyptians hence believe that these animals are generated from the earth itself. Some of the people assert that they have seen the Rats in their formation, one half of the bodies flesh, and the other half mud.

Rats swarm in Otaheite, where they feed on the fruits of the country; and they are there so bold, as sometimes even to attack the natives when asleep. The inhabitants hold them in abhorrence as unclean; and even avoid killing them, lest they should be polluted by the touch.

A gentleman, about thirty years ago, travelling through Mecklenburg, was witness to a very singular circumstance respecting one of these animals, in the post-house at New Hargard. After dinner, the landlord placed on the floor a large dish of soup, and gave a loud whistle. Immediately there came into the

room a mastiff, an Angora cat, an old raven, and a large Rat, with a bell about its neck. They all four went to the dish, and, without disturbing each other, fed together: after which, the dog, cat, and rat, lay before the fire, while the raven hopped about the room. The landlord, after accounting for the familiarity which existed among these animals, informed his guest that the Rat was the most useful of the four; for that the noise he made had completely freed the house from the Rats and mice with which it had been before infested.

THE COMMON OR DOMESTIC MOUSE*.

Although of naturally timid and fearful disposition, this little animal sometimes becomes confident and sociable. Its sight and hearing are extremely acute; and, when it observes the least motion, or hears the slightest noise, it listens attentively, sitting erect on its hinder feet; and, if the alarm continue, it runs in haste to its retreat. But if it be gradually encouraged, and nourishment and security be afforded, it by degrees loses these fears. Schreber relates an instance of a Mouse that made its appearance every day at the table of its benefactor, and there waited until it had received its usual portion of food, which it devoured and then ran away.

The Mouse is much more adapted to serve as the companion of mankind, than to be an object of aversion. Its tenderness and timidity ought to incite and receive our compassion. Schreber saw a Mouse fall into convulsions through fear, whilst held in the hand.

This little creature is now known in nearly all parts of the habitable world. It forms its place of concealment in walls, under floors, or behind the wainscoting of houses; and in such places it sometimes stores a

* SYNONYMS. *Mus musculus* *Linnaeus*.—*La Souris*. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl.* 27.

considerable magazine of provisions for future subsistence. Its food is various; and, as it is able to pass through a very small hole, there are few places that are secure from its approach.

The increase of these animals is very rapid. The females produce their young-ones, generally from five to eight in number, at all times of the year; and they grow so quickly, that, by the expiration of two or three months, they are themselves capable of breeding.

Many modes have been invented of destroying mice. Among other things, sponge, fried in fat, has been found a deadly poison to them.

THE LONG-TAILED FIELD-MOUSE*, AND SHORT-TAILED FIELD-MOUSE†.

These animals are found only in fields and gardens. They live in burrows, a foot or more underground, where they lay up great quantities of acorns, nuts, and beech-mast: according to M. de Buffon, as much as a bushel of such substance has been sometimes found in a single hole. Their habitations are frequently divided into two compartments; the one for living in with their

* DESCRIPTION. The general length of this Mouse is about four inches and a half; and of the tail nearly four inches. Its colour is yellowish-brown above, and whitish on the under parts.

SYNONYMS. *Mus sylvaticus*. *Linnaeus*.—Wood Mouse. *Shaw*.—Long-tailed Field Mouse. *Sm. Buff.*—Bean Mouse, in some parts of England.—*Mulot*. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl.* 28.

† DESCRIPTION. This species is larger than the last, measuring about six inches from the nose to the origin of the tail. The tail is seldom more than an inch and a half in length. Its fur, which is very close and compact, is of a dark ferruginous colour.

SYNONYMS. *Mus arvalis*. *Linnaeus*.—Le Campagnol. *Buffon*.—Meadow Mouse. *Pennant*. *Shaw*.—*Bingley's Memoirs of British Quadrupeds, Pl.* 30.

young, and the other for their provisions. These are usually discoverable by small heaps of mould thrown up at the entrance.

A remarkable instance of sagacity in a Long-tailed Field-mouse, occurred to the Rev. Mr. White, as his people were pulling off the lining of a hot-bed, in order to add some fresh dung. From the side of this bed something leaped with great agility, that made a most grotesque appearance, and was not caught without much difficulty. It proved to be a large Field-mouse, with three or four young-ones clinging to her teats by their mouths and feet. It was amazing that the desultory and rapid motions of the dam did not oblige her litter to quit their hold, especially when it appeared that they were so young as to be both naked and blind.

Field-mice are very prolific. They breed more than once in the year, and often produce litters of eight or ten at a time. They generally make the nest for their young-ones very near the surface of the ground, and often in a thick tuft of grass.

THE HARVEST MOUSE *.

The Rev. Gilbert White seems to have been the first person who ascertained and examined this diminutive species of Mouse. It hitherto appears to have been found only in Hampshire, and a few of the adjacent counties.

A nest of one of these little animals was brought to him. It was most artificially platted, and composed

* **DESCRIPTION.** The length of the Harvest Mouse is seldom more than two inches and a half; and of the tail about two inches. The weight is sometimes not more than the sixth part of an ounce. Its general colour is nearly that of the Squirrel or Dormouse. The belly is white.

SYNONYMS. *Mus messorius.* Kerr. *Shaw.*—Less Long-tailed Field-mouse. Harvest Mouse. *Pennant.*—*Bingley's Mem of Brit. Quad Pl.* 29.

of the blades of wheat. Its form was perfectly round; and its size about that of a cricket-ball. The aperture was so ingeniously closed, that there was no discovering to what part it belonged. This nest was so compact and well filled, that it would roll across the table without being discomposed, though it contained eight young Mice. As this nest was perfectly full, how could the dam come at her litter respectively, as to administer a teat to each? Perhaps she opens the different places for that purpose, adjusting them again when the business is over; but she could not possibly be herself contained in the ball with her young-ones, which moreover would be daily increasing in bulk. This wonderful procreant cradle, an elegant specimen of the efforts of instinct, was found in a wheat-field, suspended in the head of a thistle.

Mr. White remarked, that though the Harvest Mice hang their nest above the ground, yet in winter they burrow deep in the earth, and make warm beds of grass; but their grand rendezvous seems to be in corn-ricks, into which they are carried during the harvest. This gentleman measured some of these animals, and found, that from the nose to the tail, they were two inches and a quarter long. *Two* of them in a scale weighed down just one copper halfpenny, about the third of an ounce avoirdupois! whence he supposes them to be the smallest of the British quadrupeds. A full-grown domestic Mouse would weigh at least six times as much as one of these.

THE LEMMING RAT*.

These animals feed entirely on vegetables. In summer they form shallow burrows under the surface of the ground, and in winter they make long passages

* **DESCRIPTION.** The Lemming Rats vary much both in size and colour; those of Norway being almost equal to Water Rats, while those of Lapland are scarcely as large as Mice.

beneath the snow in search of food; for, as they lay up no winter store, they are reduced to the necessity of hunting for it during all the rigours of the cold season.

They seem to be endowed with a power of distinguishing the approach of severe weather; for before setting in of a cold winter, they leave their haunts the above countries, and emigrate in immense multitudes southward towards Sweden, always endeavouring to keep a direct line. These emigrations take place at uncertain intervals, though generally about once every ten years; and, exposed as they are to attack, great numbers of them become the food of predacious animals. Multitudes also are destroyed in endeavouring to swim over the rivers or lakes. From these different causes, very few live to return to their native mountains; and thus a check is put to their ravages, as an interval of several years is necessary to repair their numbers sufficiently for another invasion. They are bold and fierce, and will even attack men and animals if they meet them in their course; and they bite so hard, as to allow themselves to be carried to a considerable distance hanging by their teeth, before they will quit their hold.

If they are disturbed or pursued while swimming over a lake, and their phalanx is separated by oars or poles, they will not recede; but keep swimming directly on, and soon get into regular order again. They have sometimes been known even to endeavour to board or pass over a vessel. This army of Rats moves chiefly by night, or early in the morning; and makes

The former are elegantly variegated with black and tawny in the upper parts, having the sides of the head and the under parts white. The legs and tail are grayish; and the under parts of the body of a dull white. The head of the Lemming is large, short, and thick. The body is also thick; the neck short, and the limbs are stout and strong. The tail is very short.

SYNONYMS. *Mus Lemmus*. *Linnaeus*.—*Lemmus Rat*. *Lapland Marmot*. *Pennant*.—*Leming*. *Buffon*.—*Shaw's Gen. Zool. Pl.* 135.—*Bew. Quad. p.* 409.

such destruction among the herbage, that the surface of the ground over which they have passed, appears as if it had been burned. Their numbers have at times induced the common people of Norway to believe that they descended from the clouds; and the multitudes that are sometimes found dead on the banks of rivers or other places, corrupt by their stench the whole atmosphere around, and thus produce many diseases.

These animals never enter dwellings of any description, to do mischief; but always keep in the open air. When enraged, they raise themselves on their hind feet, and bark like little dogs. Sometimes they divide into two parties, attack each other, and fight like hostile armies. From these battles, the inhabitants of Lapland pretend to foretell not only wars, but also their success, according to the quarters the animals come from, and the side that is defeated. The Lemming rats are natives chiefly of the mountainous parts of Lapland, Sweden, and Norway.

The females breed several times in the year, and produce five or six young-ones at each litter. It has been observed, that they have sometimes littered during their migrations, and they have been seen carrying some of their young-ones in their mouths, and others on their backs.

THE ECONOMIC RAT*.

The migrations of the Economic Rats, are not less extraordinary than those of the Lemmings. In the spring of the year they collect together in amazing

* **DESCRIPTION.** The length of the Economic Rat is about four inches; and that of its tail, one inch. The limbs are strong; the ears short, naked, and almost hidden beneath the fur of the head. The general colour of the fur is tawny, somewhat whiter beneath than on the back.

These animals are natives of Siberia and Kamtschatka.

SYNONYMS. *Mus œconomicus.* *Linnaeus.*—Economic Mouse. *Penn.—Shaw's Gen. Zool. Pl. 134.*

numbers, and proceed in a course directly westward; swimming with the utmost intrepidity over rivers, lakes, and even arms of the sea. Many of them are drowned, and many destroyed by water-fowl or rapacious fish. Those that escape, emerging from the water, rest awhile to bask, dry their fur, and refresh themselves. The Kamtschadales, who have a kind of superstitious veneration for these little creatures, whenever they find any of them thrown upon the banks of the rivers, weak and exhausted, render them every possible assistance. As soon, says Dr. Grieve, as they have crossed the river Penschinska, at the head of the gulf of the same name, they turn in a south-westerly direction; and, about the middle of July, generally reach the rivers Ochotska and Judoma, a distance of about a thousand miles! The flocks are also so numerous, that travellers have sometimes waited more than two hours for them to pass. The retirement of these animals is very alarming to the Kamtschadales; but their return, which is generally in October, occasions the utmost joy and festivity, a successful chase and fishery being always considered as its certain consequence.

The Kamtschadales never destroy the hoards of these Bats. They sometimes take away part of their store; but, in return for this, they invariably leave some kind of food to support them in its stead.

The Economic Rats construct burrows, with the utmost skill, immediately below the surface of a soft, turfy soil. They form a low chamber of a flattish arched form, about a foot in diameter, to which they sometimes make as many as thirty small passages or entrances. Near the chamber they often construct other caverns, in which they lodge their winter stores. These consist of plants; which they gather in summer, dry, and bring home; and even, at times, they bring them out of their cells to give them a more thorough drying in the sun. The Economic Rats associate in pairs; and except during the summer-time, (when the

male leads a solitary life in the woods,) the male and female are generally to be found in the same nest.

THE HAMSTER RAT*.

These, the only species of Rats with pouches in their cheeks, that are found in Europe, are natives of Austria, Silesia, and many parts of Germany. They live under the surface of the ground, burrowing obliquely downwards. At the end of their passage, the male sinks one perpendicular hole; and the female several, sometimes seven or eight. At the extremity of these are formed several vaults; either as lodges for themselves and their offspring, or as store-houses for their food. Each young-one has its separate apartment, and each sort of grain its appropriate vault. The vaults are of different depths, according to the age of the animals. A young Hamster makes them scarcely a foot deep; an old one sinks them to the depth of four or five feet. The whole diameter of the habitation, with all its communications, is sometimes eight or ten feet.

The Hamsters feed on grain, herbs, and roots; and, at times, even eat flesh. Their pace is slow; but in burrowing into the ground they exhibit great agility.

* DESCRIPTION. The Hamster is about the size of the Brown or Norway Rat; but much thicker, and its tail is only about three inches long. The colour of this Rat is reddish brown above, and black beneath; but on each side of the body there are three large, oval, white spots. The ears are rather large. On each side of the mouth there are two pouches or receptacles for food; which, when empty, are so far contracted, as not to appear externally; but, when filled, they resemble a pair of tumid bladders, with a smooth veiny surface, which is concealed by the fur of the cheeks.

SYNONYMS. *Mus Cricetus*. Linn.—German Marmot. Hamster Rat. Pennant.—Hamster. Buffon.—Shaw's Gen. Zool. Pl. 137.—Bew. Quad. p. 404.

In order to facilitate the transportation of food to their magazines, they are furnished with pouches in their cheeks. These are each of sufficient capacity to hold about two ounces of grain; which the animal empties into its store-house, by pressing its two fore feet against its cheeks. When its cheeks are full, a Hamster may easily be caught with the hand, without the risk of being bitten; as it has not, in this condition, the free motion of its jaws. If, however, a short time be allowed, it soon empties its pouch, and stands on the defensive.

On dissecting one of these animals, Dr. Russel found the pouch, on each side of its mouth, stuffed with young French Beans, arranged lengthways, so exactly and so close to each other, that it appeared strange by what mechanism this had been effected; for the membrane which forms the pouch, though muscular, is extremely thin, and the most expert fingers could not have packed the beans in more regular order. When they were laid loosely on the table, they formed a heap three times the bulk of the animal's body.

What these creatures lay up, is not for their winter's support, (as during that season they always sleep,) but for their nourishment, previously to the commencement, and after the conclusion, of their torpid state. The quantity in the burrows depends upon the size and sex of the inhabitants: the old ones frequently amass upwards of a hundred-weight of grain, but the young-ones and the females provide a quantity much smaller.

At the commencement of the cold season, the Hamsters retire into their hiding-places, the entrances to which they close up. Here they repose for some months; and they are often dug up by the peasantry, who at this season of the year employ much of their time in hunting for their retreats. These are easily known by the small mounds of earth raised at the end of the galleries.

When the Hamster is found in a torpid state, his head is bent under his body, between the two fore legs;

and the hind legs rest upon his muzzle. The eyes are closed; and when the eye-lids are forced open, they instantly shut again. The members are all stiff, and the body feels as cold almost as ice. It has been satisfactorily ascertained, that this animal, in order to become torpid, must be excluded from all communication with the external air. If a Hamster be put into a cage filled with earth and straw, and exposed to a degree of cold sufficient to freeze water, he will continue awake and active; but if the cage be sunk four or five feet beneath the surface of the ground, he will soon be as torpid as if in his own burrow.

The life of a Hamster is divided between eating and fighting. He seems to have no other passion than that of rage; which induces him to attack every animal that comes in his way, without in the least attending to the strength of the enemy. Ignorant of the art of saving himself by flight, rather than yield he will allow himself to be beaten to pieces with a stick. If he seize a man's hand, he must be killed before he will quit his hold. The magnitude of the horse terrifies him as little as the address of the dog, which last is fond of hunting him. When the Hamster perceives a dog at a distance, he begins by emptying his cheek-pouches, if they happen to be filled with grain: he then blows them up so prodigiously, that the size of his head and neck greatly exceeds that of the rest of the body. He raises himself on his hind legs, and thus darts upon the enemy. If he catches hold, he never quits his foe but with the loss of life. This ferocious disposition prevents the Hamster from being at peace with any animal whatever. He even makes war against his own species. When two Hamsters meet they never fail to attack each other, and the stronger always devours the weaker. A combat between a male and female commonly lasts longer than that between two males. They begin by pursuing and biting each other; then each of them retires aside, as if to take breath. After a short interval they renew the combat, and continue to fight till one of them

falls. The vanquished animal uniformly serves for a repast to the conqueror.

The females bring forth their offspring twice or thrice in the year; each litter consisting of six or eight young-ones; and their increase in some years is excessively rapid. In about three weeks after their birth, the young-ones are able to seek their own provisions, which the mother compels them to do; and in fifteen or sixteen days they begin to dig the earth.

In some seasons, the Hamsters are so numerous that they occasion a dearth of corn. In one year, about 11,000 skins, in another 54,000, and in a third year 80,000, were brought to the Town-house of Gotha, as vouchers of claims to the rewards allowed for the destruction of the animals.

OF THE MARMOT TRIBE.*

This tribe does not differ, in many particulars, from that of the Rats. The animals have thick cylindrical bodies, and large roundish heads. The fore feet have each four claws, and a very small thumb; and the hind feet five claws. They reside in subterraneous holes, and pass the winter in sleep. Only eight species have as yet been discovered.

THE ALPINE MARMOT †.

Being natives chiefly of the highest summits of the Alps and the Pyrenean Mountains, these singular quadrupeds delight in the regions of frost and snow, and

* The Marmots have two wedge-shaped front teeth in each jaw; and five grinders on each side in the upper, and four in the lower jaw. They have collar-bones in the skeleton.

† DESCRIPTION. This animal is about sixteen inches in length, has a short tail, and bears some resemblance both to the rat and the bear. The colour is brownish above, and

are seldom found on the plains, or in the open country. Their holes are constructed with much art; each of them forming a kind of gallery in the form of the letter Y, with an aperture at each upper extremity, and terminating below in a capacious apartment, where several of the animals lodge together. This apartment is well lined with moss and hay, of which they lay up a great store during the summer.

It is affirmed that the labour of collecting the materials for their nest, is carried on by the animals in concert; that some of them cut the finest herbage, which is collected by others; and that they transport it to their dens in the following manner: One, it is said, lies down on his back, allows himself to be loaded with hay, and extends his limbs; and others trail him, thus loaded, by the tail, taking care not to upset him. The task of thus serving as a vehicle, is divided alternately among the number. "I have often seen them practise this mode of conveyance, (says M. Beauplau, in his account of Ukraine,) and have had the curiosity to watch them at it for several days successively." The friction occasioned by their sustaining a passive part in the operation, is assigned as a reason why the hair is generally rubbed off from the backs of these animals. But it is more probable that this is produced by their frequent digging of the earth, which alone is sufficient to rub off the hair. However this may be, it is certain that they dwell together, and work in common in their habitations, where they pass three-fourths of their lives. Thither they retire during rain, or at the approach of

bright tawny on the under parts. The head is rather large, and flattish; the ears short, and hid in the fur; and the tail is thick and bushy.

SYNONYMS. *Arctomys Marmota*. Linn.—*Gmel.*—*Mus Marmota*. Linn. *Syst. Nat. ed. xii.*—Common Marmot. Kerr.—Marmotte. Buffon.—Alpine Marmot. Penn. Shaw's *Gen. Zool. Pl. 143.*—Bew. *Quad. p. 399.*

danger; and they never go out but in fine weather, and even then to no great distance.

One of these animals stands sentinel upon a rock, while the others gambol about upon the grass, or are employed in cutting it in order to make hay. If the sentinel perceive a man, an eagle, a dog, or any other dangerous animal, he instantly alarms his companions by a loud whistle, and is himself the last that enters the hole*.

The old Marmots, at break of day, come out of their holes to feed; afterwards they bring out their young-ones. The latter scamper on all sides; chase each other; sit on their hind feet; and remain in that posture, facing towards the sun, with an air expressive of satisfaction. They are fond of warmth; and, when they think themselves secure, will bask in the sun for several hours successively.

The Marmot has a quick eye, and discovers an enemy at a considerable distance. He never does the least injury to any other animal; and when himself attacked, attempts to escape. But, if flight be impossible, he will defend himself with spirit against even men and dogs.

In countries where rhubarb grows, it is said that the Marmots generally fix their residence near those plants: and that, if ten or twenty of the plants are adjacent to each other, there are always several of their burrows immediately under the shade and protection of the leaves.

About the end of September, or the beginning of October, the Marmots retire to their holes, in which they become torpid, and from which they do not again come abroad until the beginning of April. When they

* Beauplau's Description of Ukraine.—This writer seems either to have mistaken the Marmot for the next following species, or to have confounded the two. The animals he describes, he calls Bobaques.

feel the first approach of the sleeping season, they shut up both of the passages to their residence; and they perform this operation with so much labour and solidity, that it is more difficult to dig the earth in the parts they have thus fortified, than in any adjacent spot. At this time they are very fat, weighing sometimes as much as twenty pounds each; and they continue so for three months; but they afterwards gradually decline, and, by the end of winter, become extremely emaciated. When found in their winter retreats, they appear rolled up like a ball, and are covered with hay.

If caught when young, the Marmot may easily be domesticated. It will walk on its hind feet, sit upright, and carry food to its mouth with its fore feet. It will dance with a stick between its paws, and perform various tricks to please its master.

In the winter season these animals are sought after with great eagerness by the inhabitants of the countries where they are found; and are killed in immense numbers, both on account of their flesh, and for their skins.

THE BOBAC*.

The burrows which the Bobacs form in the ground, are constructed obliquely, and are of the depth of two, three, or four yards. They consist of several galleries, which have one common entrance from the surface, each gallery terminating in a nest for some of its inhabitants. Sometimes, however, the burrows consist of

DESCRIPTION. The Bobac is about the size of the Alpine Marmot. Its colour is gray above, and fulvous or ferruginous beneath. The tail is short, somewhat slender, and very hairy.

It is a native of the mountainous parts of Poland, Russia, and some other countries of Europe.

SYNONYMS. *Arctomys Bobac.* Linn. Gmel.—Bobac. *Buffon*.—*Shaw's Gen. Zool. Pl.* 144.

but one passage. Though these burrows are found in greatest numbers where the earth is lightest, yet they are very common even in the strata of the mountains. In hard and rocky places, from twenty to forty of the animals join together to facilitate the work; and they live in society, each with its nest at the end of its respective gallery. Towards the approach of winter, they collect into their nests the finest hay they can procure; and in such plenty, that sufficient is often found in one nest for a night's food for a horse.

During the middle or sunny part of the day, they sport about the entrance of their holes; but they seldom go far from them. At the sight of man, they retire with a slow pace; and sit upright near the entrance, giving a frequent whistle, and listening to the approach. In places where they live in large families, they always station a sentinel to give notice of any danger, during the time when the rest are employed in feeding.

They are mild, good-natured, and timid. They feed only on vegetables; which they go in search of in the morning, and about the middle of the day. They sit on their hams when they eat, and carry the food to their mouth with their fore paws; and in this posture it is that they defend themselves when attacked. When they are irritated, or when any one attempts to lay hold of them, they bite desperately, and utter a shrill cry. In the summer-time they eat voraciously; but they remain torpid all winter, except when kept in very warm places; and even then they eat but little, and will, if possible, escape into some comfortable place, in which to pass this dreary season. These animals soon become tame, even when taken of full age; and the young-ones are familiar from the moment they are caught.

Their flesh is eatable; and, except that it is somewhat rank, resembles that of the hare. The fat is used in the dressing of leather and furs; and the skins are employed by the Russians for clothing. The female

brings forth her young-ones in the spring, and usually produces six or eight at a litter.

OF THE SQUIRRELS IN GENERAL*.

The Squirrels are for the most part light, nimble, and elegant animals: they climb trees with the utmost agility, and spring, with astonishing security, from one branch to another. Some of them are provided with hairy membranes, that extend from the fore to the hind legs: these, when spread out, render them more buoyant than they otherwise would be, and enable them to leap through considerable distances from one tree to another. A few of the species form their nests, and live almost entirely, in the trees; and others burrow under the ground. None of them are carnivorous. Many of the Squirrels may, with care, be rendered docile; but when they are in the least irritated, they attempt to bite. In confinement they are generally very frolicsome. When they are on the ground, they advance by leaps; and in eating they sit erect, and hold the food in their fore paws.

THE COMMON SQUIRREL†.

This elegant little animal is equally admired for the neatness of its figure, and the activity and liveliness of its disposition. Though naturally wild and timid, it is soon reconciled to confinement, and is easily taught to receive with freedom the most familiar caresses from the hand that feeds it.

* They have two front teeth in each jaw, the upper ones wedge-shaped, and the lower sharp; five grinders on each side of the upper jaw, and four on each side of the under one. They have also collar-bones in the skeleton; and, in most of the species, the tail spreads towards each side.

† SYNONYMS. *Sciurus vulgaris*. *Linnaeus*.—L'Ecureuil. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl.* 31.

In the spring these animals are peculiarly active. During this season they pursue each other among the trees, and exert various efforts of agility. In the warm summer nights they may also be observed in a similar exercise. They seem to dread the heat of the sun; for during the day-time, they commonly remain in their nests, and they make their principal excursions by night.

The nest of the Squirrel is, in its construction, exceedingly curious. It is generally formed among the large branches of a tree, where they begin to fork off into small ones. After choosing the place where the timber begins to decay, and where a hollow may the more easily be formed, the Squirrel begins by making a kind of level between these forks; and then, bringing moss, twigs, and dry leaves, it binds them together with such art, as to resist the most violent storm. This is covered up on all sides; and has but a single opening at the top, just large enough to admit the little animal; and this opening is itself defended from the weather by a kind of canopy, formed like a cone, so as to throw off the rain, however heavy it may fall. The nest thus formed, is very commodious and roomy below; soft, well knit together, and every way convenient and warm. The provision of nuts and acorns is seldom found in its nest; but in the hollows of the tree, these are carefully laid up together, and they are never touched by the animals except in cases of necessity, when no food is to be had abroad. Thus a tree serves both for a retreat and a storehouse; and, without leaving it during the winter, the Squirrel possesses all those enjoyments which his nature is capable of receiving.

This little animal is extremely watchful: and it is said, that if the tree in which it resides is but touched at the bottom, it takes the alarm, quits its nest, at once flies off to another tree, and thus, in case of necessity, travels with ease along a whole forest, until it finds itself perfectly out of danger. In this manner

it continues for some hours at a distance from home, until the alarm is past; and then it returns by paths that, to nearly all quadrupeds but itself, are utterly impassable. Its usual way of moving is by bounds; these it takes from one tree to another at a very great distance; and if it be at any time obliged to descend, it runs up the side of the next tree with astonishing facility.

The Squirrel seldom makes any noise, except when it experiences either pain or pleasure: in the former case it emits a sharp piercing note; and in the latter it makes a noise not unlike the purring of a cat. The tail of the Squirrel is its greatest ornament, and serves as a defence against the cold: it is likewise of use to the animal in leaping from one tree to another.

In northern climates the Squirrels, at the approach of winter, change their red summer coat to gray; and it is singular that this alteration will take place in those climates, even within the warmth of a stove. Dr. Pallas had a Squirrel entirely red, brought to him on the 12th of September. It was placed in a stove. About the 4th of October many parts of its body began to grow hoary: and when it died, which was a month afterwards, the whole body had attained a gray colour; the legs, and a small part of the face, alone retaining a reddish tinge.

THE GRAY SQUIRREL

Both in their form and habits of life, these animals very much resemble the Common Squirrels. They are found not only in the northern parts of the continent

* **DESCRIPTION.** This animal is about the size of a young rabbit; and, except on the inside of the limbs and the under parts of the body, which are white, its colour is an elegant pale gray.

SYNONYMS. *Sciurus cinereus.* Linn.—Petit Gris. Buffon. Penn.—Shaw's Gen. Zool. Pl. 147.—Bew. Quad. p. 387.

of Europe, but also in several districts of America. They occasionally migrate to immense distances, so that sometimes there is not one of them to be seen, during a whole winter, in places where there were millions in the preceding year. In their journeys from one part of the country to another, when it becomes necessary to pass a lake or river, it is asserted that they lay hold of a piece of pine or birch bark; and that, drawing this to the edge of the water, they mount upon it, and abandon themselves to the waves. They erect their tails, to catch the wind; but if it blows too strong, or the waves rise high, the pilot and the vessel are both overturned. This kind of wreck, which often consists of three or four thousand sail, generally enriches the Laplanders, who reside in the vicinity, and who find the dead bodies on the shore; and, if these have not lain too long on the sand, they prepare the furs for sale. But when the winds are favourable, the little adventurers make a happy voyage, and arrive in safety at their destined port.

In North America these animals sometimes commit great havoc in the plantations, but particularly among the maize; for they climb up the stalks, tear the ears in pieces, and eat only the loose and sweet kernel which lies quite in the inside. They sometimes come by hundreds upon a maize-field, and thus destroy the whole crop of a farmer in one night. In Maryland, therefore, some years ago, every person was compelled to procure and exhibit annually four Squirrels; the heads of which, to prevent deceit, were given to the surveyor. In other provinces, every one who killed a Squirrel received from the public treasury two-pence on delivering up its head. Pennsylvania alone paid, from January, 1749, to January, 1750, no less a sum than *eight thousand pounds*, currency, in rewards for the destruction of these animals; consequently, in that year, as many as 640,000 of them must have been killed.

The Gray Squirrels reside principally among the

trees, in the hollows of which they form their nests, of moss and straw, and line them with softer materials. They feed on acorns, and on the various kinds of nuts with which the woods abound; and of these they collect great stores for their winter subsistence, carefully laying them up in holes which they dig for that purpose, beneath the roots of trees, or in other secure places.

When these animals are sitting on a bough, and perceive a man approach, they instantly move their tail backward and forward, and make a chattering noise with their teeth. This renders them peculiarly odious to sportsmen, who often lose their game by the alarm they thus create. It is a difficult matter to kill them with guns, since they change their places on the trees with such extreme agility, as generally to elude the shot of even the most expert marksman. If caught when young they are easily tamed; and in this state they will readily associate with other domestic animals.

The skins of the Gray Squirrels are used in America for ladies' shoes; and they are often imported into England as furs.

THE STRIPED OR GROUND SQUIRREL

The Striped Squirrels subsist upon corn and nuts of every description; and, like the common species, collect great quantities of provisions in autumn, for their subsistence during winter, and store them in their holes.

They are natives of America, and dig burrows in the ground, which serve for their habitations, and to which

DESCRIPTION. The length of the Striped Squirrel is about six inches; its tail, which is rather more, is not curved and bushy, but long and very narrow. The skin is of a reddish brown colour; and is marked with five black streaks, one of which runs along the back, and two on each side.

SYNONYMS. *Sciurus striatus.* *Linn.*—Striped Dormouse. *Penn.*—Ground Squirrel. *Kerr.*—*Ecureuil Suisse.* *Buffon.*—*Shaw's Gen. Zool. Pl.* 148.—*Bew. Quad. p.* 389.

they fly for shelter whenever danger is near. These burrows are deep; and commonly divided into many branches, from one of which they have an opening to the surface of the ground. The advantage they derive from this is, that when they ramble abroad for food, and are prevented from entering the hole at which they went out, they may not expose themselves to their pursuers, but immediately retreat into the other. But in autumn, when the leaves are falling from the trees, it is very diverting to observe their consternation when pursued; for their holes being covered with leaves, they have then some difficulty in finding them. They run backward and forward, as if they had lost their way; and seem to know where their subterraneous haunts lie, but cannot discover the entrances. If they are pursued, and any sudden or loud noise is made, they are constrained to take refuge in the trees; but this they never do except in cases of necessity.

The subterraneous dwellings of these animals are formed with much art. They are wrought into long galleries with branches on each side, and each of them terminates in an enlarged apartment, in which they hoard their stock of winter provision. Their acorns are lodged in one; in a second, the maize; in a third, the hickery-nuts; and in a fourth, perhaps their most favourite food, the chesnut. In Siberia, the Striped Squirrels hoard the kernel of the stone-pine in such quantities, that sometimes ten or fifteen pounds weight of these have been taken out of a single magazine.

As a Swede was, some time ago, making a mill-dike, late in autumn, he took for that purpose the soil of a neighbouring hill, and discovered a subterraneous walk belonging to a family of these Squirrels. After having traced this to some distance, he found a gallery on one side, like a branch parting from the main stem. It was nearly two feet long; and, at its extremity, there was a quantity of acorns of the white oak, which the careful little animal had stored up against the winter. He soon afterwards found another gallery, on one side, like the

former, but containing a store of maize; a third had hickery-nuts; and the last and most secret one contained as many excellent chesnuts as would have filled two hats.

In winter, these Squirrels are seldom seen; as, during that season, they keep within their holes. On a fine, clear day, however, they sometimes come out. They frequently dig through into cellars, where the country-people lay up their apples; and these they eat, or spoil in such a manner that few or none of any value are left. In the choice of their food, they are remarkably nice. They have been observed, after having filled their pouches with rye, to fling out this on meeting with wheat, and to substitute for it the superior grain.

They cannot be tamed without great difficulty; and even then it is always dangerous to handle them, as they will bite very keenly when a person is not aware of them. These animals are killed merely on account of their skins; which, though forming but a slight and ordinary fur, have a pleasing appearance. The skins are chiefly sold to the Chinese.

THE AMERICAN FLYING SQUIRREL*, AND EUROPEAN FLYING SQUIRREL.

By means of the lateral membranes with which the bodies of these Squirrels are furnished, they are able to make astonishing leaps of ten or twelve yards, and upwards, from tree to tree. In these efforts, they extend

* DESCRIPTION. This animal, which is a native of most parts of North America, has large black eyes, circular naked ears, and a hairy membrane extending nearly round the body. The tail, which tapers to a point, has its hair disposed flatways on its sides. The upper parts of this Squirrel are of a cinereous brown: the belly is white, tinged with yellow. The membrane passes the fore and hind legs to the tail: on the fore legs it adheres as far as the toes, and includes a peculiar bone which

their hind legs, and stretch out the intervening skin, by which they present a greater surface to the air, and become much more buoyant than they would otherwise be. They are, however, under the necessity of taking advantage of the lower branches of the trees to which they leap; for their weight prevents them from keeping in a straight line. Sensible of this, they always take care to mount so high as to ensure them from falling to the ground. This extended skin acts upon the air somewhat in the manner of a paper kite, and not by repeated strokes, like the wings of a bird. The animal, being heavier than the air, must of course descend; the distance, therefore, to which it can jump, depends on the height of the tree on which it stands. When it is at rest, the skin is wrinkled up against its sides.

These animals are generally seen in flocks of ten or twelve together; and to persons unaccustomed to them, they appear at a distance, in their leaps, like leaves blown from the trees by the wind. "When I first saw them, (says Catesby, in his account of Carolina,) I took them for dead leaves blown one way by the wind; but was not long so deceived, when I perceived many of them follow one another in the same direction."

They inhabit hollow trees: where they sleep during the day-time, and from whence they only make their appearance in the night, at which latter time they are very lively and active. They associate in flocks; several of them living in the same tree, which they never willingly quit to run upon the ground, but almost constantly reside among the branches.

The females produce three or four young-ones at a litter. This species use the same food, and form their

is attached to the wrist, and helps to stretch out this skin in flying; and on the hind leg it extends to the ancles.

SYNONYMS. *Sciurus volucella*. *Linnaeus*.—Flying Squirrel. *Catesby*. — *Polatouche*. *Buffon*.—American flying Squirrel. *Shaw*.

hoards in the same manner, as others of the Squirrel tribe. They are easily tamed, and soon become familiar: they love warmth, and are fond of creeping into the sleeve or pocket of their owner; and if thrown upon the ground, they instantly show their dislike to it, by running up and sheltering themselves in his clothes. J. Stackhouse, Esq. of Pepdarvis, in Cornwall, informed me, that a mercer with whom he was acquainted had one of these animals, which was quite tame. He accidentally lost it at the approach of winter. Some months afterwards, on showing some blanketing to a customer, he was surprised to observe in it a small hole: this he pursued, and found it extend to the centre of the roll, through all the folds; and at the bottom of it lay the little animal, in a perfectly torpid state.

*The European Flying Squirrel** is found in the woods of Lapland and Norway, where it feeds principally on the tender branches of the beech and pine-trees. In its habits of life this animal differs very little from the preceding species. It always sleeps during the day-time, and seldom appears abroad in bad weather. It is active through the whole winter; being frequently caught during that season, in the traps that are laid for the Gray Squirrels.

The females, when they have young-ones, never leave their nest in pursuit of food, without previously wrapping these carefully up in the moss. They pay to them the utmost attention; brooding anxiously over them, and tenderly sheltering their bodies, by their flying membrane, from the cold.

DESCRIPTION. The European Flying Squirrel differs from the American species principally in having its tail full of hair, and rounded at the end, and in the colour of its body; the upper part of which is a fine gray, and the lower white. Its whole length is about nine inches, of which the tail occupies five.

SYNONYMS. *Sciurus volans.* *Linnaeus.*—Flying Squirrel. *Pennant.*—Polatouche. *Buffon.*—*Shaw's Gen. Zool. Pl.* 149.—*Bew. Quad. p.* 394.

OF DORMICE IN GENERAL*.

All the species of Dormice live in holes in the ground, where they continue in a state of torpor during the winter. Their pace is a kind of leap, in which, like the jerboas, they are assisted by their tail. They feed entirely on vegetables, and eat only in the night. In this act they sit upright, and carry the food to their mouth with the paws. When they are thirsty, they do not lap, (like most other quadrupeds,) but they dip their forefeet, with the toes bent, into the water, and drink from them.

THE COMMON DORMOUSE†.

The nest of the Dormouse is usually formed of interwoven moss, dead leaves, and grass, in the hollow of some low tree, or near the bottom of close shrubs. It is about six inches in diameter, and has a small orifice near the top, for the ingress and egress of the animal. In this, about the month of May or June, the female produces her offspring, which are usually four or five in number.

Dormice have not the sprightliness of the Squirrel; but, like that animal, they collect together little magazines of nuts, acorns, and other food, for their winter

* These animals have two front teeth in each jaw; the upper ones are wedge-shaped, the lower compressed; and in each jaw are four grinders. The whiskers are long. The tail is cylindrical, hairy, and thickest towards the end. The fore and hind legs are of nearly equal length; and the fore feet have each four toes.

† DESCRIPTION. This animal is about the size of a mouse; but, in proportion, more bulky. It is of a tawny red colour, with a white throat. Its eyes are full, and black.

SYNONYMS. *Myoxus Muscardinus*. *Linnaeus. Gmel.*—*Mus Avelanarius*. *Linn. Syst. Nat. ed. xii.*—Dormouse, or Sleeper. *Ray.*—*Muscardin*. *Buffon.*—*Bingley's Memoirs of British Quad. Pl. 32.*

provision. The consumption of their hoard, during the rigour of winter, is but small; for, retiring into their holes on the approach of the cold, and rolling themselves up, they lie torpid nearly all that gloomy season. Sometimes they experience a short revival in a warm sunny day; when they take a little food, and then relapse into their former state.

OF THE JERBOAS IN GENERAL*.

The Jerboas seem, in many respects both of conformation and habit, much allied to the kangaroos; but an adherence to artificial system will not allow them to be arranged together. They use their long hind legs in leaping, seldom go on all-fours; and, with their fore legs, they both carry the food to their mouth, and make their holes in the ground. They are inhabitants principally of warm climates.

THE SIBERIAN JERBOA†.

Dry, hard, and clayey ground, is that which the Jerboas prefer for the place of their habitation. In this they dig their burrows very speedily, not only with their fore feet, but with their teeth; and fling the earth back with their hind feet, so as to form a hillock at the entrance. The burrows are many yards long; and run

* They have two front teeth above, and two below; the fore legs are short, and the hind ones very long; and they have clavicles, or collar bones.

† DESCRIPTION. This animal is of a pale yellowish fawn colour on the upper parts, and white beneath. The length of its body is about eight inches; and of the tail ten. It very much resembles the Egyptian Jerboa; except in the hind feet, each of which has five instead of three toes.

SYNONYMS. *Dipus Jaculus*. *Linn. Gmel.*—*Mus Jaculus*. *Linn. Syst. Nat. ed. xii.*—Egyptian Jerboa. *Pennant.*—Jerboa. *Bruce.*—Gerboa, or Daman Israel. *Shaw's Travels.* Gerboise et Alagtaga. *Buffon.*—*Shaw's Gen. Zool. Pl. 158.*—*Bewick's Quad. p. 397.*

obliquely and winding, but are not above half a yard in depth below the surface. They end in a large space or nest, the receptacle of the purest herbs. These holes have usually but one entrance; yet, by a wonderful sagacity, the animals work from their nest another passage, to within a very small space from the surface, which, in case of necessity, they can burst through, and so escape.

The sands and rubbish which surround modern Alexandria are much frequented by Jerboas. They live there in troops; and, in digging the ground, are said to penetrate even through a stratum of softish stone, which is beneath the layer of sand. Though not actually wild, these animals are exceedingly shy and restless: the slightest noise, or the appearance of any strange object, makes them retire to their holes with precipitation.

It is almost impossible to kill them, except when taken by surprise. The Arabs have the art of catching these Jerboas alive, by stopping up the outlets to the different galleries belonging to the colony; one excepted, through which they force them to issue from the ground.

Though animals of a chilly nature, they keep within their holes in the day-time, and wander about only during the night. They come out about sun-set, and remain abroad till the sun has drawn up the dews from the earth.

They walk only on their hind legs, the fore legs being very short; and at the approach of danger, they immediately take to flight, in leaps six or seven feet high, which they repeat so swiftly, that a man mounted on a good horse can scarcely overtake them. They do not proceed in a straight line; but jump first to one side, and then to the other, till they find either their own burrow, or some neighbouring one. In leaping, they carry their tails stretched out; but in standing or walking, they carry them in the form of an S, the lower part touching the ground. If surprised, they will sometimes go on all-fours; but they soon recover their attitude of

standing on their hind-legs, like a bird. When undisturbed, they use the former posture; they then rise erect, listen, and hop about like a crow. In digging or eating, they drop on their fore-legs; but in the latter action, they often sit upright like a squirrel.

The Arabs of the kingdom of Tripoli, teach their greyhounds to hunt the antelope, by first instructing them to catch Jerboas; and so agile are these little creatures, that Mr. Bruce has often seen, in a large court-yard or enclosure, the greyhound employed a quarter of an hour before he could kill his diminutive adversary; and had not the dog been well trained, so as to make use of his feet as well as his teeth, he might have killed two antelopes during the time that he was occupied in killing one Jerboa.

In their wild state these animals are fond of tulip-roots, and of nearly all the edible plants; but in confinement, they do not refuse raw meat. It requires no difficulty to tame them, but it is necessary that they should be kept warm. They are so susceptible of cold, as to foretel bad weather by wrapping themselves close up in their cage before its commencement; and those that are abroad, always, on these occasions, stop up the mouths of their burrows. They sleep during the winter; but a warm day sometimes revives them. On the return of the cold, they always retreat again to their holes.

M. Sonnini, while he was in Egypt, fed, for some time, six of these animals, in a large cage of iron wire. The very first night they entirely gnawed asunder the upright and cross sticks of their prison; and he was under the necessity of having the inside of the cage lined with tin. They were fond of basking in the sun; and the moment they were put into the shade, they clung close to each other, and seemed to suffer much from the privation of warmth. They did not usually sleep during the day. Though they had great agility in their movements, gentleness and tranquillity seemed to form their character. They suffered themselves to

be stroked with great composure; and never made a noise nor quarrelled, even when food was scattered among them. No distinguishing symptoms of joy, fear, or gratitude, were discoverable in their disposition; and their gentleness was by no means either amiable or interesting: it appeared the effect of a cold and complete indifference, approaching to stupidity. Three of these animals died, one after another, before M. Sonnini left Alexandria. Two died on a rough passage to the island of Rhodes; and the last, he supposes, was devoured by cats when he was in that island.

He says the Siberian Jerboas are so tender, that it is very difficult to transport these tender creatures into other climates: but, as an indispensable precaution to those who attempt it, he advises that they be closely shut up in strong cages, or in other conveniences, without any possibility of escape; for their natural disposition inciting them to gnaw whatever comes in their way, they may occasion considerable damage to a ship in the course of her voyage; and, being able to eat through the hardest wood, may even endanger her sinking.

These animals, which are natives of various parts of the eastern deserts of Siberia, and also of Barbary, Syria, and some parts of Tartary, breed several times in the summer, and usually produce seven or eight young-ones at a litter. The Arabs eat them, and, as articles of food, esteem them among the greatest delicacies of their tables.

OF THE HARE TRIBE IN GENERAL.*

These animals subsist entirely on vegetable food. They are all remarkably timid. The habitations of

* The generic character of the Hares consist in their having two front-teeth, both above and below, the upper pair duplicate; two small interior ones standing behind the others: the fore feet with five, and the hinder with four toes.

most of the species are burrows, formed under the surface of the ground. Some of them collect into flocks, consisting of five or six hundred, or even more, and migrate in these numbers from place to place, frequently to a great distance, in search of food.

In northern latitudes, where the frosts of the winter are very intense, and where snow lies for several months on the ground, all the Hares, at the approach of that season, change their colour, and become white. They are thus enabled, in a great measure, to elude the pursuit of their enemies.

THE COMMON HARE *.

This animal is found throughout Europe, and indeed in most of the northern parts of the world. Being destitute of weapons of defence, it is endowed, by Providence, with an unusual degree of fear. Its timidity is known to every one: it is attentive to every alarm, and is, therefore, furnished with ears very long and tubular, which catch the remotest sounds. The eyes are so prominent, as to enable the animal to see both before and behind.

The Hare feeds in the evenings, and sleeps in his *form* during the day; and, as he generally lies on the ground, his feet are protected, both above and below, with a thick covering of hair. In a moon-light evening many Hares may frequently be seen sporting together, leaping about and pursuing each other; but the least noise alarms them, and they then scamper off, each in a different direction. Their pace is a kind of gallop, or quick succession of leaps; and they are extremely swift, particularly in ascending the higher grounds, to which, when pursued, they generally have recourse; here their large and strong hind legs are of singular use to them.

* SYNONYMS. *Lepus timidus*. *Linnaeus*.—Le Lièvre. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl. 33.*

During winter they generally choose a form exposed to the south, that they may obtain all the possible warmth of that season; and in summer, when they are desirous of shunning the hot rays of the sun, they change this for one with a northerly aspect; but, in both cases, they have the instinct of generally fixing upon a place where the immediately surrounding objects are nearly of the colour of their own bodies.

It was observed of one Hare, that, as soon as the dogs were heard, though at the distance of nearly a mile, she rose from her form, swam across a rivulet, then lay down among the bushes on the other side, and by this means evaded the scent of the hounds. When a Hare has been chased for a considerable length of time, she will sometimes push another Hare from its seat, and lie down there herself. When hard pressed, she will mingle with a flock of sheep, run up an old wall, and conceal herself among the grass on the top of it, or cross a river several times at small distances. She never runs in a line directly forward; but constantly doubles about, which frequently throws the dogs out of the scent: and she generally goes against the wind. It is remarkable that Hares, however frequently pursued by the dogs, seldom leave the place where they were brought forth, or that in which they usually sit; and it is a common thing to find them, after a long and severe chase, in the same place on the following day.

The females have less strength and agility than the males: they are, consequently, more timid; and never suffer the dogs to approach them so near, before they rise, as the males. They are likewise said to practise more arts, and to double more frequently.

This animal is gentle, and susceptible even of education. But, though it exhibits some degree of attachment to its master, the Hare does not often become altogether domestic: for, even when taken very young, brought up in a house, and accustomed to kindness and attention, no sooner is it arrived at a certain age, than

it generally seizes the first opportunity of recovering its liberty, and escaping to the fields.

Whilst Dr. Townson was at Göttingen, a young Hare was brought to him, which he took so much pains with, as to render it more familiar than these animals commonly are. In the evenings it was so frolicsome, that it would run and jump about his sofa and bed. Sometimes, in its play, it would leap upon, and pat him with his fore-feet; or, whilst he was reading, would even knock the book out of his hand. But whenever a stranger entered the room, the little animal always exhibited considerable alarm.

Mr. Borlase saw a Hare that was so familiar as to feed from the hand, lie under a chair in a common sitting-room, and appear, in every other respect, as easy and comfortable in its situation as a lap-dog. It now and then went out into the garden, but, after regaling itself, always returned to the house, as its proper habitation. Its usual companions were a greyhound and a spaniel, both so fond of hare-hunting, that they often went out together for that purpose, without any person accompanying them. With these two dogs this tame Hare spent its evenings: they always slept on the same hearth, and it would frequently rest itself upon them.

Dogs and foxes pursue the Hare by instinct: wild cats, weesels, and birds of prey, devour it; and man, far more powerful than all its other enemies, makes use of every artifice to seize upon an animal which constitutes one of the numerous delicacies of his table. This defenceless animal is even rendered by him an object of amusement in the chase.

The period of gestation in the Hare is about a month; and the females generally produce three or four young-ones at a litter, and this about four times in the year. The eyes of these are open at their birth: the mother suckles them about twenty days, after which they leave her and procure their own food. They make forms at a little distance from each other,

and never go far from the place where they were brought forth. The Hare lives about eight years.

THE RABBIT*.

Rabbits are partial to sandy hillocks, on light soils, which present no obstruction to their burrowing; and they prefer situations which are not far distant from those kinds of vegetables to which they are most partial as food. They live in burrows formed under the surface of the ground;* and in which the females bring forth their offspring. The fecundity of these animals is truly astonishing. They breed several times in the year, and generally produce seven or eight young-ones at a time. Supposing this to happen regularly for about four years, the progeny from a single pair will in this period amount to more than a *million*. Their numerous enemies prevent any increase likely to prove injurious to mankind; for besides their affording food to us, they are devoured by animals of prey of almost every description, which make dreadful havoc among them. Notwithstanding all these means of destruction, the Rabbits in the Balearic islands once proved such a nuisance, that the inhabitants were obliged to implore the assistance of a military force from Augustus, the Roman emperor, to exterminate them.

The female goes with young about thirty days. A short time previously to her littering, if she does not find a hole suited to her purpose, she digs one; not in a straight line, but of a zig-zag form. The bottom of this she enlarges every way; and then, with a quantity of hair which she pulls from her own body, she makes a warm and comfortable bed for her offspring. During the whole of the first two days she never leaves them, except when compelled by hunger

* **SYNONYMS.** *Lepus cuniculus.* *Linnaeus.*—Le Lapin.
Buffon.—Coney. *Ray.* *Bingley's Mem. of Brit. Quad. Pl. 35.*

to do so; and then she eats with surprising quickness, and immediately returns. She always conceals them from the male, lest he should devour them; and therefore, when she goes out, she covers up the hole so carefully, that its place is scarcely perceptible to the eye. In this manner she continues her attention for about a month, by which time they are able to provide for themselves. Notwithstanding the unaccountable propensity which the male has to devour its young-ones, yet, when these are somewhat grown, and are brought by the mother to the mouth of the hole, to eat such vegetables as she gets for them, he seems to know them, takes them betwixt his paws, smooths their hair, and caresses them with great tenderness.

Rabbets, as they cannot easily articulate sounds, and are formed into societies that live underground, have a singular mode of giving alarm. When danger is threatened, they thump on the earth with one of their hind feet; and thus produce a sound that can be heard a great way by animals near the surface. This, Dr. Darwin, from its singularity, and its aptness to the situation of the animals, concludes to be an artificial sign, and merely acquired from their having experienced its utility. He will not allow of any thing like an instinctive propensity.

A friend of Dr. Robert Anderson of Edinburgh, had a singular breed of Rabbets, with only one ear. These propagated as fast, and as constantly produced their like, as the two-eared Rabbets from which they were originally descended.

The fur of the Rabbit is useful in the manufacture of hats.

THE ALPINE HARE*.

The most southern residence of these animals is on

* DESCRIPTION. The Alpine Hare is about nine inches in length. It has a long head and whiskers; and above each

the Altaic chain of mountains, near the lake of Baikal, in Siberia; and they extend from that part of the country as far northward as to Kamtschatka. They are always found in the middle regions of the snowy mountains, where these are clad with wood, and where herbs and moisture abound. They sometimes burrow between the rocks, but more frequently lodge in the crevices. They are generally found in pairs; but in bad weather, they collect together, lie on the rocks, and whistle so much like the chirp of sparrows, as easily to deceive the hearer. At the report of a gun they run off into their holes; whence, however, if nothing more is heard, they soon return.

By the usual wonderful instinct of similar animals, they make a provision in their inclement seats against the rigorous season. A company of them, towards autumn, collect together vast heaps of favourite herbs and grasses; which they place either beneath the overhanging rocks, or between the chasms, or around the trunk of some tree. The way to these heaps is marked by a worn path; and, in many places, the plants appear scattered, as if to be dried in the sun and properly harvested. The heaps are formed like round or conoid ricks; and are of various sizes, according to the number of the society employed in forming them. They are sometimes about a man's height, and usually three or four feet in diameter.

Thus the animals wisely provide their winter's stock: without which, in the cold season, they must infallibly perish; for they are prevented by the depth of snow, from quitting their retreats in quest of food. They

eye there are two very long hairs. The ears are short and rounded. The fur is dusky at the roots, of a bright bay colour at the ends, slightly tipped with white, and intermixed with long dusky hairs: at first sight, however, the animals seem of a bright, unmixed bay colour.

SYNONYMS. *Lepus Alpinus*. *Linnaeus*—*Pica des Alpes*. *Buffon*.—Mountain Hare. *Kerr*. *Shaw's Gen. Zool. Pl.* 163.

select the best of vegetables, and crop them when in the fullest vigour. These, by the very judicious manner in which they dry them, they make into excellent hay. The ricks they thus form, are the origin of fertility among the rocks; for the relics, mixed with the dung of the animals, rot in the barren chasms, and create a soil productive of vegetation.

These ricks are also of great service to such persons as devote themselves to the laborious occupation of sable-hunting; for, being obliged to go far from home, their horses would often perish from want, had they not the provisions of the Alpine Hares for their support.

The people of Jakutz are said to feed both their horses and cattle on the remnant of the winter stock of these Hares. As food, the Alpine Hares are themselves neglected by mankind; but they are the prey of numerous animals.

THE OGOTONA HARE

These little creatures live under heaps of stones, or in burrows which they form in the sandy soil, and which have two or three entrances. Their nest is formed of soft grass; and the old females, for greater security, make several burrows near each other, in order that, if disturbed, they may have a secure retreat. They feed in the night; and their voice, as in the last species, is like the note of a sparrow, but much more shrill.

Their principal food is the tender bark of trees, and different kinds of herbs. Before the approach of severe weather, even in the spring of the year, they collect a

* **DESCRIPTION.** The Ogotona Hare is somewhat more than six inches in length, of a pale brown colour above, and somewhat white beneath; and is entirely destitute of tail.

SYNONYMS. *Lepus Ogotona*. *Linnaeus*.—*Ochodona*, by the Mongolians.—*Shaw's Gen. Zool. Pl.* 163.

store of vegetables, with which they fill their holes. These operations are considered by the inhabitants, to be certain signs of the approaching change of weather. In autumn, directed by the same instinct as the former species, they form ricks of hay, of an hemispherical shape, about a foot high and wide. In the spring, these heaps are gone, and nothing but the relics are seen.

The Ogotona Hares inhabit all Mongolia, and beyond the lake Baikal, where they are found in great abundance. The females produce their young-ones in spring, and, by the end of June, these are fully grown.

THE CALLING HARE

These are solitary animals, and rarely to be seen, even in the places where they are most common. They choose for their habitations some dry spot amidst bushes, and covered with a firm sod; and prefer the western sides of the hills. In these they burrow, leaving a very small hole for the entrance, and thence forming long and intricate galleries, in which they make their nests.

Their voice alone betrays their abode: it is like the piping of a quail, but somewhat deeper, and so loud, as to be heard at a great distance. It is repeated, at equal intervals, three, four, and often six times successively. The female is silent for some time after parturition, which is about the beginning of May. She

DESCRIPTION. This is a smaller species than the last, but has a great resemblance to it in form. The head is thickly covered with fur; the ears are large and rounded; the legs are very short, and the feet furred beneath. The fur on the whole animal is soft, long, smooth, and of a brownish lead-colour, and the hairs are tipped with black. On the sides of the body, a yellowish tinge prevails.

SYNONYMS. *Lepus pusillus.* *Linnaeus.*—Calling Hare. *Pennant.*—*Shaw's Gen. Zool. Pl.* 163.

produces six young-ones at a litter; towards which she exhibits great affection.

These most harmless and inoffensive animals never go far from their holes; they feed and make their little excursions by night. They are easily tamed, and seldom attempt to bite, even when handled. The males, in confinement, are observed to attack one another, and they express their anger by a kind of grunting noise.

They are natives of Russia.



Pecora *

OF THE CAMEL TRIBE IN GENERAL†.

The disposition of the animals which constitute the present tribe, is in general so mild and inoffensive, that, when they are either bred in a state of domestication, or are caught young and trained to labour, they become extensively serviceable to mankind. In hot and sandy regions they are employed as beasts of draught and burden. Their pace is usually slow; but, being able to sustain themselves, even on the longest journeys, with a very small portion of food, and to undergo fatigues which few, perhaps no other animals

* The animals belonging to this order have several wedge-like front teeth in the lower jaw, and none in the upper. Their feet have cloven hoofs. They live on vegetable food; and all the species ruminates, or chew their cud.

† In the lower jaw of the Camels there are six front teeth, which are somewhat thin and broad. The canine teeth are at a little distance both from these and the grinders: in the upper jaw there are three, and in the lower two. The upper lip is cleft, or divided.

could endure, some of the species are an invaluable acquisition to the inhabitants of the districts where they are found.

The number of species hitherto described is seven, of which only two are found on the old continent, the rest being confined to the alpine countries of Chili and Peru. In a wild state they are supposed to be gregarious, and to associate together in vast herds. The females have each two teats, and seldom produce more than one young-one at a birth. The hair of these animals is of a soft and silky texture: and their flesh constitutes a palatable food.

Like all the other genera of their order, they are furnished with four stomachs, in consequence of which they not only live solely on vegetable food, but ruminate or chew the cud. They swallow their food unmasticated. This is received into the first stomach, where it remains some time to macerate; and afterwards, when the animal is at rest, by a peculiar action of the muscles, it is returned to the mouth in small quantities, chewed more fully, and then swallowed a second time for digestion.

THE ARABIAN, OR SINGLE-HUNCHED CAMEL*, AND
BACTRIAN, OR TWO-HUNCHED CAMEL†.

The Arabian Camel is that, with a single hunch on

* See Plate vii. Fig. 4.

DESCRIPTION. The height of this animal, at the shoulder, is from five to seven feet. The hunch is situated on the middle of the back. The hair is soft, woolly, and very unequal; it is longer on the nape, under the throat, and on the hunch, than on any other parts of the body. Its colour is usually somewhat of a reddish gray.

SYNONYMS. Camelus Dromedarius. Linn.—Le Dromadaire. Buffon.—Dromedary. Smellie.—Arabian or One-hunched Camel. Penn.—Shaw's Gen. Zool. ii. tab. 166.—Bew. Quad. p. 154.

† **DESCRIPTION.** The Bactrian Camel is distinguishable at first sight, from the last named species, by the two lumps

its back, which we so frequently see exhibited in the streets of this country. In many parts of the east it is domesticated; and, in carrying heavy burdens over the sandy deserts, it supplies a place which the horse would not be able to fill. The tough and spongy feet of these animals are peculiarly adapted to hot climates, for in the most fatiguing journeys they are never found to crack. The sand seems indeed their element; for no sooner do they quit it, and touch the mud, than they can scarcely keep upon their feet, and their constant stumbling in such situations is exceedingly dangerous to the rider. Their great powers of abstaining from water enable them to pass unwatered tracks of country for seven, eight, or, as Leo Africanus says, for even fifteen days, without requiring any liquid. They can scent water at half a league's distance, and, after a long abstinence, will hasten towards it, long before their drivers perceive where it lies. Their patience under hunger is such, that they will travel many days fed only with a few dates, some small balls of barley-meal, or on the miserable thorny plants they meet with in the deserts. M. Denon informs us, that during his travels in Egypt, the Camels of his caravan had nothing in the day but a single feed of beans, which they chewed for the remainder of the time, either on the journey, or lying down upon the scorching sand, and this without their exhibiting the slightest indication of discontent.

A large Camel will bear a load of a thousand or twelve hundred pounds, and, with this, it will traverse the deserts. When about to be loaded, these animals,

on the upper part of its body: one of these is situated on the shoulders, and the other at a little distance behind. It is a somewhat larger animal than the Arabian Camel, and its legs are, in proportion, shorter.

SYNONYMS. *Camelus Bactrianus.* *Linnaeus.*—Le Chameau. *Buffon.*—Bactrian Camel. *Pennant.*—*Shaw's Gen. Zool. Pl.* 167. —*Bewick's Quad.* p. 150.

at the command of their conductor, bend their knees. If any disobey, they are immediately struck with a stick, or their necks are pulled down; and then, as if constrained, and uttering their groan of complaint, they bend themselves, put their bellies on the earth, and remain in this posture till they are loaded and desired to rise. This is the origin of those large callosities on the parts of their bellies, limbs, and knees, which rest on the ground. If over-burdened, the Camels give repeated blows with their heads, to the person who oppresses them, and sometimes utter the most lamentable cries.

They have a great share of intelligence, and the Arabs assert that they are so sensible of ill-treatment, that, when this is carried too far, the inflictor will not find it easy to escape their vengeance; and that they will retain the remembrance of an injury till an opportunity offers for gratifying their revenge. Eager, however, to express their resentment, they no longer retain any rancour when once they are satisfied; and it is even sufficient for them to *believe* they have satisfied their vengeance. Accordingly, when an Arab has excited the rage of a Camel, he throws down his garments in some place near which the animal is to pass, and disposes them in such a manner, that they appear to cover a man sleeping under them. The animal recognises the clothes, seizes them in his teeth, shakes them with violence, and tramples on them in a rage. When his anger is appeased, he leaves them, and then the owner of the garments may make his appearance, and, without fear, may load and guide him as he pleases. "I have sometimes seen these animals, (says M. Sonnini,) weary of the impatience of their riders, stop short, turn round their long necks to bite them, and utter cries of rage. In these circumstances the man must refrain from striking his beast, as that would but increase his fury. Nothing can be done but to have patience, and endeavour to appease the animal by patting him with the hand, and, after a little while, he will resume his way

and his pace of himself." Like the elephant, Camels have their periodical fits of rage, and during these they sometimes have been known to take up a man in their teeth, throw him on the ground, and trample him under their feet.

In eastern countries there is no mode of conveyance so cheap and expeditious as that by Camels. The merchants and other passengers unite in a caravan, to prevent the insults and robberies of the Arabs. These caravans are often very numerous; and are always composed of more Camels than men. In these commercial travels the march is not hastened: as the route is frequently seven or eight hundred leagues, the motions and journeys are regulated accordingly. The Camels only walk, and they travel thus from ten to twelve leagues a day. Every night they are unloaded, and allowed to pasture at freedom.

When in a rich country, or fertile meadow, they eat, in less than an hour, as much as serves them to ruminate the whole night, and to nourish them during the next day. But they seldom find such pastures, neither is this delicate food necessary for them. They seem to prefer wormwood, thistles, nettles, broom, cassia, and other prickly vegetables, to the softest herbage. As long as they find plants to browse, they easily dispense with water. This faculty of abstaining from the use of water, is an effect of their structure. Till very lately the Camels have been supposed to possess, independently of the four stomachs common to ruminating animals, a fifth bag, which served them as a reservoir for holding water. From a preparation, however, in the collection of Mr. John Hunter, it appears that this fifth bag never existed but in idea. The second stomach is of very peculiar construction, being formed of numerous cells several inches deep, having their mouths uppermost, and the orifices apparently capable of muscular contraction. When the animal drinks, it probably has a power of directing the water into these cells, instead of letting it pass into the first stomach, and when these

are filled, the rest of the water will go into that stomach. In this manner a quantity of water may be kept separate from the food, and may serve occasionally to moisten it in its passage to the true stomach, for several days.

When travellers find themselves much in want of water, it is no uncommon thing to kill a Camel for what he contains, which is always sweet and wholesome.

“Of all animals (says M. de Buffon) that man has subjugated, the Camels are the most abject slaves. With incredible patience and submission, they traverse the burning sands of Africa and Arabia, carrying burdens of amazing weight. The Arabians consider the Camel as a gift sent from Heaven; a sacred animal, without whose assistance they could neither subsist, traffic, nor travel. The milk of the Camel is their common food. They also eat its flesh; and of its hair they make garments. In possession of their Camels, they want nothing, and have nothing to fear. In one day they can perform a journey of fifty leagues into the desert, which cuts off every approach from their enemies. All the armies in the world would perish in pursuit of a troop of Arabs. By the assistance of his Camel, an Arab surmounts all the difficulties of a country which is neither covered with verdure, nor supplied with water. Notwithstanding the vigilance of his neighbours, and the superiority of their strength, he eludes their pursuit, and carries off with impunity all that he ravages from them. When about to undertake a predatory expedition, an Arab makes his Camels carry both his and their own provisions. When he reaches the confines of the desert, he robs the first passengers who come in his way, pillages the solitary houses, loads his Camels with the booty, and, if pursued, he accelerates his retreat. On these occasions he displays his own talents as well as those of the animals. He mounts one of the fleetest of them, conducts the troop, and obliges them to travel day and night, almost without either stopping, eating, or drinking; and, in this manner,

he often performs a journey of three hundred leagues in eight days."

With a view to his predatory expeditions, the Arab instructs, rears, and exercises his Camels. A few days after their birth he folds their limbs under their belly, forces them to remain on the ground, and in this situation loads them with a weight, which is never removed but for the purpose of being replaced by a greater. Instead of allowing them to feed at pleasure, and drink when they are thirsty, he begins with regulating their meals, and makes them gradually travel long journeys, diminishing at the same time the quantity of their aliment. When they acquire some strength they are trained to the course, and their emulation is excited by the example of horses, which, in time, renders them not only fleet, but more robust than they would otherwise be.

The saddle used by the Arabs is hollowed in the middle, and has, at each bow, a piece of wood placed upright, or sometimes horizontally, by which the rider keeps himself on his seat. This, with a long pocket, to hold provisions for himself and his beast, a skin of water for the rider, (the animal being otherwise well supplied,) and a leather thong, are the whole of the equipage that the Arab traveller stands in need of, and with nothing more than these he is able to cross the deserts.

The pace of the Camel being a high trot, M. Denon says, that when he first mounted one of these animals, he was greatly alarmed lest this swinging motion would have thrown him over its head. He, however, was soon undeceived; for, on being once fixed in the saddle, he found that he had only to give way to the motion of the beast, and then it was impossible to be more pleasantly seated for a long journey, especially as no attention was requisite to guide the animal, except in making him deviate from his proper direction. "It was (he remarks) entertaining enough, to see us mount our beasts: the Camel, as soon as the rider leans on

his saddle, preparatory to mounting, rises very briskly, first on his hind and then on his fore legs, thus throwing the rider first forward and then backward; and it is not till the fourth motion that the animal is entirely erect, and the rider finds himself firm in his seat. None of us were able for a long time to resist the first shake, and we had each to laugh at his companions."

When the traveller is not in haste, or when he accompanies a caravan, the progress of which is always slow, on account of the Camels of burden, a kind of covered litter is fixed on one of these animals, in which he is tolerably at his ease, and where he may even sleep if he chooses. The drivers of the loaded Camels have each a stick, which they use sparingly, if occasion requires; and those who ride, whip their animals with a long strap of leather, at the same time urging them forward by a clicking noise of the tongue.

It has been attempted, but without success, to introduce Camels, both of the Arabian and Bactrian species, into our West India islands. The people were unaccustomed to their habits and manner of feeding; and this, together with the insects called chigoes, insinuating themselves into their soft feet, and producing inflammations, and at length painful ulcers, seems to have rendered them totally unfit for service.

The Arabian Camels are natives chiefly of the deserts of Asia and Africa. The Bactrian species are found, at the present day, in the same places where they were observed by the ancients; namely, in Usbec Tartary, the ancient Bactria. They are likewise natives of Thibet, and of countries near the frontiers of China.

The Bactrian Camels are employed as beasts of burden throughout all the regions where they are found. They are capable of supporting even the rigorous climate of the environs of the lake Baikal in Siberia, where they subsist, during the winter, on the bark and tender branches of the trees. They are, in every

respect, better adapted for living in temperate climates than the Arabian Camels, for they experience much less injury, from humid and marshy countries, than these.

The flesh of the Camel is dry and hard, but not unpalatable. It is so much esteemed by the inhabitants of Egypt, that in Cairo and Alexandria, it was, not long ago, forbidden to be sold to the Christians. In Barbary, the tongues are salted and smoked, for exportation to Italy and other countries, and they form a palatable food. The hair is an important article of commerce, serving for the fabrication of the tents and carpets of the Arabs; and leather is made of the skin. In the *materia medica* of China, the different parts of the Camel occupy a conspicuous place: the fat is called the oil of bunches; and the flesh, the milk, the hair, and even their dung, are admitted into the prescriptions of the Chinese physicians.

THE LLAMA* AND VICUNA†.

The lofty and mountainous regions of Peru, Chili, and other districts of South America, are inhabited both by the Llama and Vicuna. They are mild, gen-

* See Plate x. Fig. 5.

DESCRIPTION. The Llama is about four feet and a half in height, and, in length, from the neck to the tail, nearly six feet. Its usual weight is about 300 pounds. The back is nearly even, and, instead of a hunch there, the animal has a protuberance on the breast. The head is small, with fine black eyes, and the neck is very long and arched. The general shape is that of a Camel, without the dorsal protuberance. In a wild state the hair of the Llama is long and coarse; but when domesticated, it becomes short and smooth. The colour is white, gray, and russet, disposed in spots.

SYNONYMS. Camelus Glama. *Linna.*—Llama. *Penn.*—Lama. Buff.—Glama. *Kerr.*—*Shaw's Gen. Zool.* ii. tab. 168.

† **DESCRIPTION.** The Vicuna is somewhat smaller than the Llama; and its limbs are more neatly formed. There is no

tle, and tractable animals, and are employed in many parts of these countries for the carrying of burdens. In the Spanish settlements, before the introduction of mules, they were employed in the ploughing of land. Both the Llama and the Vicuna go on their journeys with great gravity, and nothing can induce them to change their pace. Like the Camel, they lie down to be loaded; and, when they are wearied, no blows will induce them to proceed. Their disposition is indeed so capricious, that, sometimes, when they are struck, they lie down, and caresses only will induce them again to rise. When provoked, they have no other mode of avenging themselves but by spitting, and they have the faculty of ejecting their saliva to a considerable distance. It is asserted, though without foundation, that this is of so corrosive a quality, that it will produce blisters upon the skin. The saliva of a Llama, which was exhibited in Piccadilly in the year 1805, I received on my hand, and the keeper informed me that he had several times had it thrown even upon his face, without injury.

Llamas are employed in transporting the rich ores out of the mines of Potosi. In their journeys, they will sometimes travel four or five days successively before they seem desirous of repose; and they then rest spontaneously twenty or thirty hours before they resume their toil. Sometimes, when they are inclined to rest a few minutes only, they bend their knees, and lower their bodies with great care, to prevent their load from falling off, or being deranged: when, however, they hear their conductor's whistle, they rise with equal caution, and proceed on their journey. In going along

protuberance on the breast. The colour of the upper parts of the body is reddish brown, and of the under parts whitish.

SYNONYMS. *Camelus vicugna*. *Linnaeus*.—*Le Vigogne*. *Buffon*.—*Vicunna*. *Pennant*.—*Vicuña*. *Shaw*.—*Shaw's Gen. Zool.* ii. tab. 168.

during the day-time, they browse wherever they find herbage, and generally spend the night in chewing their cud. If, after they are determined not to rise, their masters continue to abuse them, they sometimes kill themselves, in their rage, by striking their heads alternately from right to left on the ground.

When these animals are among their native mountains, they associate in immense herds in the highest and steepest parts. Here' they frequently climb rocks, along which no man would dare to follow them; and while the rest of a herd feed, one of them is always stationed as a sentinel on the point of some adjacent rock. When this animal observes any one approach, he gives a kind of neigh, and the herd, taking the alarm, run off with incredible speed. They gallop to a considerable distance, then stop, turn round, and gaze at their pursuers till they come near, and immediately set off again. They out-run all the dogs, so that the inhabitants have no other mode of killing them than with guns.

The Llama which I saw in London in 1805, was supposed to have been at that time about eight months old. It had been taken in one of the Spanish ships which had fallen a prize to our seamen. No animal could, apparently, be more tame or docile; but it was easily irritated, and on such occasions always ejected its saliva on the offender. It seemed to bear our climate remarkably well.

OF THE MUSK TRIBE IN GENERAL.*

The Musk animals are inhabitants, almost exclusively, of India and the Indian islands. Two or three of the species are so exceedingly small, as scarcely to exceed a rabbit in size. They are very gentle, but excessively timid: on the appearance of a man they fly with pre-

* In the lower jaw they have eight front teeth; and in the upper jaw two long tusks, one on each side, which project out of the mouth.

cipitation into the recesses of their native wilds. Like the camels, they have no horns.

THE THIBETIAN MUSK*.

These animals live retired among the highest and rudest mountains of Thibet, and some other parts of Asia. In the autumn, large flocks of them collect together for the purpose of migration southward, in consequence of the approaching cold. During this migration the peasants lie in wait for them, and either catch them by means of snares, or kill them with arrows and bludgeons. At these times they are often so meagre and languid, from hunger and fatigue, as to be taken without much difficulty; for they have no weapons of defence except their tusks. Their activity is very great, and they are able to take astonishing leaps over the tremendous chasms of the rocks. They tread so lightly on the snow, as scarcely to leave a mark; while the dogs that are employed in the pursuit of them sink in, and are frequently obliged to desist from the chase. In a state of captivity they live but a short time.

In an oval receptacle, about the size of a small egg, is contained the well-known drug called *musk*. This hangs from the middle of the abdomen, and is peculiar to the male animal. A full-grown male will yield a drachm and a half, and an old one two drachms. The

* See Plate v. Fig. 5.

DESCRIPTION. This species is destitute of horns. The ears are somewhat large, the neck is thick, and the hair on the whole body long, upright, and thick set. Each hair is undulated, the tip ferruginous, the middle black, and the bottom cinereous. The limbs are slender, and of a black colour; and the tail is so short as to be scarcely visible. The length of the male is about three feet, and that of the female about two feet and a quarter; and their average weight is from twenty-five to thirty pounds.

SYNONYMS. *Moschus moschiferus*. Linn.—Musc. Buffon.—Thibet Musk. Penn.—Shaw's Gen. Zool. ii. tab. 171.—Bew. Quad. p. 115.

and, when disturbed, never gallop, but escape by a rapid kind of trot. In their common walk they lift their feet very high, and they are able, without difficulty, to step over a gate five feet in height.

Their faculty of hearing is supposed to be more acute than that either of their sight or scent. It is consequently extremely difficult to kill them in the summer-time; and the Indians have then no other method of doing this, than by creeping after them, among the trees and bushes, till they get, within gun-shot. In winter, however, when the snow is so hard frozen as to allow the natives to go upon it in their snow-shoes, they are able frequently to run the animals down; for the slender legs of the Elks break through the snow at every step, and plunge them up to the belly. They are so tender-footed, and so short-winded, that a good runner will generally tire them out in less than a day.

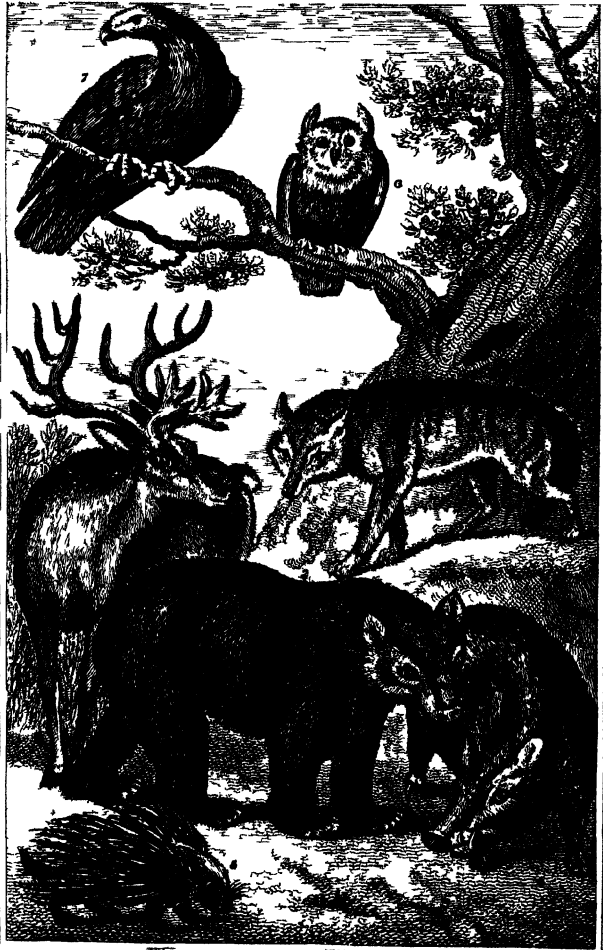
In summer-time the Elks frequent the margins of rivers and lakes, getting into the water in order to avoid the innumerable multitudes of musquitoes, and other flies that pester them during that season. They are often killed by the Indians while they are crossing rivers, or swimming from the main land to islands. When pursued in these situations, they make no resistance whatever. The young ones are so simple, that, in North America, Mr. Hearne has seen an Indian paddle his canoe up to one of them, and take it by the poll without the least opposition; the poor harmless animal seeming, at the same time, as contented along-side the canoe, as if it were swimming by the side of its dam, and looking up in the faces of those who were about to become its murderers with the most fearless innocence; using its fore-feet, almost every instant, to clear its eyes of the numerous musquitoes which alighted upon it.

Elks are the easiest to tame and domesticate of any animals of the Deer kind. They will follow their keeper to any distance from home; and, at his call, will return with him, without the least trouble, and without ever attempting to deviate from the

An Indian, at the Factory at Hudson's Bay, had, in the year 1777, two Elks so tame, that, when he was on his passage to Prince of Wales's Fort, in a canoe, they always followed him along the bank of the river; and at night, or on any other occasion, when he landed, they generally came and fondled on him, in the same manner as the most domestic animal would have done, and never attempted to stray from the tents. He did not, however, possess these animals long; for he one day crossed a deep bay in one of the lakes, in order to save a very circuitous route along its bank, and expected the creatures would, as usual, follow him round: but, unfortunately, at night they did not arrive; and as the howling of wolves was heard in the quarter where they were, it is supposed they had been devoured by these voracious beasts, for they were never afterwards seen.

M. D'Obsonville had a Moose-deer in his possession, while in the East Indies. He procured it when only ten or twelve years old, and kept it about two years without ever tying it up. He even let it run abroad, and sometimes amused himself with making it draw in the yard, or carry little burdens. It always came when called, and he found few signs of impatience, except when it was not allowed to remain near him. When he departed from the island of Sumatra, he gave it Mr. Law of Lauriston, the governor-general, an intimate friend. This gentleman sent it to his country-house, where, being kept alone, and chained, it became so furious as not to be approached without danger: even the person who every day brought its food was obliged to leave this at some distance. "After some months' absence (says M. D'Obsonville) I returned: it knew me afar off, and as I observed the efforts it made to get at me, I ran to meet it; and never shall I forget the impression which the caresses and transports of this faithful animal made upon me."

A successful attempt has been made at New York to render the Elk useful in agricultural labour. Mr.



1 Wolf 2 Flick Bear 3 Horn Deer 4 Hog
 5 Raccoon 6 Great Horned Owl 7 Eagle

disorder, or at least of preventing an approaching fit, by scratching its ear till it draws blood.

The flesh of the Elk is good; but the grain is coarse, and it is much tougher than any other kind of venison. According to Mr. Pennant, the tongues are excellent, and the nose is so like marrow, as to be esteemed the greatest delicacy produced in Canada. The skins make excellent tent-covers and shoe-leather.

These animals inhabit the forests of Europe, America, and Asia, as far as Japan. The females generally produce their young-ones, from one to three in number, towards the end of April or the beginning of May.

THE REIN-DEER *.

To the Laplanders this animal is the substitute for the horse, the cow, the goat, and the sheep; and is their only wealth. The milk affords them cheese; the flesh, food; the skin, clothing: of the tendons they make bow-strings, and, when split, thread; of the horns, glue; and of the bones, spoons. During the winter the Rein-deer supplies the want of a horse, and draws sledges with amazing swiftness over the frozen lakes and rivers, or over the snow, which at that time covers the whole country.

With a couple of Rein-deer yoked to a sledge, it is

See Plate vi. Fig. 3.

DESCRIPTION. The Rein-deer is found in most of the northern regions of Europe, Asia, and America. Its general height is about four feet and a half. The colour is brown above and white beneath; but, as the animal advances in age, it often becomes of a grayish white. The space about the eyes is always black. The hair on the under part of the neck is much longer than the rest. The hoofs are long, large, and black. Both sexes are furnished with horns, but those of the male are much the largest. These are long, slender, and branched; furnished with brow-antlers, having widely-expanded and palmated tips, directed forwards.

SYNONYMS. *Cervus tarandus.* *Linnaeus.*—*Renne.* *Buffon*
—*Shaw's Gen. Zool.* ii. tab. 175.—*Bew. Quad.* p. 127.

said that a Laplander is able to travel 112 English miles in a day. The Laplanders say, that they can thrice change the horizon in twenty-four hours; that is, they can three times pass that object, which, at their setting out, they saw at the greatest distance their eyes could reach.

The sledge is formed somewhat like a boat, having a back-board in it for the rider to lean against. Its bottom is convex, and none but a person well practised in such a mode of travelling can preserve himself a moment from being overset. It is square behind, but projects to a point before. The traveller is tied in it like a child in a cradle. He manages his carriage with great dexterity, by means of a stick with a flat end, to remove stones or any obstructions he may meet with. To the peak in front a thong is fixed, which yokes the Rein-deer. The bit is a piece of narrow leather, tacked to the reins of the bridle over the animal's head and neck; and from the breast a leathern strap, passing under the belly, is fastened to the front part of the sledge.

Before the Laplander enters the sledge he puts on his gloves, afterwards he places himself in it, taking the rein or halter fastened to the Rein-deer's head, and tying it about his right thumb. In the mean time the Deer stands still, and the rein hangs on the left side. When the man is ready to set off, he shakes the rein with violence from side to side, and the animal springs forward with great speed. The driver directs the course of the Deer, which is irregular and serpentine, by pulling the rein on the side he would have him go; and encourages him with his voice. It is for this purpose that the love-songs of the Laplanders are in general composed; and among these are found some beautiful specimens of the poetry of a rude and uncivilized nation.

It must appear wonderful that the Laplanders should be able to travel in winter, by night as well as by day, when the earth presents one entire surface of snow, and

not a single vestige is discoverable of human industry to direct their way, the snow, at the same time flying about in all directions, and almost blinding them: yet it is certain that they have no difficulty to find the spot to which they are bound, and very rarely meet with any accident. They fix bells to the harness of the Rein-deer, in order that they may be kept together by hearing, when they cannot see one another, after the light of their short day fails them. To guide them in their route, the Laplanders observe the quarter from which the wind blows, and at night are directed by the stars. The missionary *Leems*, who resided ten years among this people, remarks, that during the whole of that time he did not remember more than one fatal accident having happened from this mode of travelling.

A rich Laplander is often possessed of a herd of more than a thousand Rein-deer. In autumn these seek the highest hills, in order to avoid the Lapland Gad-fly*, which, at that time, deposits its eggs in their skins. This insect is the pest of the Rein-deer, and numbers die that are thus visited. The moment a single fly appears, the whole herd instantly perceive it: they fling up their heads, toss about their horns, and at once attempt to fly for shelter amidst the snows of the loftiest mountains. In summer they feed on several kinds of plants; but during winter on the Rein-deer liverwort†, to get at which, as it lies far beneath the snow, they dig with their feet and antlers. It is, therefore, a most kind dispensation of Providence, that, in the Deer, the only tribe living among snows, most of the females should be furnished with horns, the more readily to provide themselves with food. But besides this there is another lichen, that hangs on the Lapland

* *Oestrus tarandi* of Linnæus. The skins of the Rein-deer, after they are killed, are sometimes found to be as full of holes as a sieve, from the operations of these insects.

† *Lichen rangiferinus* of Linnæus.

pine-trees, and which affords sustenance to the Rein-deer when the snows are too deep for them to reach their usual food. In severe winters, when the snow is impenetrably frozen, the boors frequently cut down some thousands of these moss-clad trees, for the support of their herds.

During the summer these animals lose their vigour and swiftness, and are soon overcome by the heat. Mr. Consett saw many of them reclining in the woods, and apparently so enfeebled as scarcely to be able to move out of the way. When thus oppressed, they frequently make a noise like the grunting of a hog.

Besides the gad-fly, the Rein-deer have several other enemies, the chief of which are bears and wolves; but unless they are taken by surprise, or are attacked when their horns are newly shed, they are able to defend themselves against the attacks of these animals, and even entirely to drive them away.

The Rein-deer are able to swim with such incredible force and swiftness across the widest rivers, that a boat with oars can scarcely keep pace with them. They swim with their bodies half above water, and will pass a river or a lake even in the coldest weather.

All persons who have described the Rein-deer have noticed a cracking noise which they make when they move their feet. This has been attributed to the animals separating and afterwards bringing together the divisions of the hoofs. As the Rein-deer inhabit a country generally covered with snow, such a construction of their hoofs is admirably adapted to the surface they have most commonly to tread, as it prevents them from sinking too deeply into it.

Pontoppidan tells us, that "the Rein-deer has over his eye-lids a kind of skin, through which it peeps, when otherwise, in hard showers of snow, it would be obliged to shut its eyes entirely." He, however, seems to have mistaken this for, probably, a breathing-hole, somewhat similar to that near the eye of the fallow deer, and some of the species of antelope.

The Rein-deer cast their horns annually. The rudiments of the new horns are at first covered with a kind of woolly membrane, which the creature, after some time, rubs off. They also change their hair every spring, during which time they are lean, and of little use. The female begins to breed at the age of two years, goes with young eight months, and generally brings forth two at a time. The fondness of the dam for her offspring is very remarkable. They follow her two or three years, but do not acquire their full strength until four. It is at this age that they are trained to labour; and they continue serviceable for four or five years. They seldom outlive the age of fifteen or sixteen.

In Siberia, where they are extremely numerous, these animals meet with a more rough and savage usage than their fellows experience from the harmless Laplanders. In the woody districts, where springes, fire-arms, and spring-guns can be applied, the natives resort to such for either the taking or killing of this harmless animal: but in open plains, where these contrivances would fail, many other means have been invented. Those adopted by the Samoydes seem the most common.

These people go out in parties for the purpose of killing Rein-deer; and when they perceive a herd, they station several tame Rein-deer, which they bring with them, on an elevated plain to the windward. Then, from this place to as near the savage herd as they can venture to come without alarming them, they put into the snow long sticks, at small distances, and to each of them tie a goose's wing, which flutters about freely with the wind. This being done, they plant similar sticks and pinions on the other side, under the wind; and the Rein-deer being busy with their pasture beneath the snow, and being chiefly guided by their scent, generally observe nothing of these preparations. When every thing is ready, the hunters separate; some hide themselves behind their snowy entrenchments, whi/

others lie with bows and other weapons in the open air to the leeward; and others again go to a distance, and drive, by a circuitous route, the game between the terrific pinions. Scared by these, the wild Rein-deer run directly to the tame ones, which are standing by the sledges; but here they are alarmed by the concealed hunters, who drive them to their companions that are furnished with arms, and these immediately commit terrible slaughter among them.

If it happen that a savage herd are feeding near a mountain, the hunters hang up their clothes on stakes about the foot of the mountain, making also, with the same frightful pinions, a broad passage towards it, into which they drive the game. As soon as they are come into this path, the women go with their sledges directly across the further end of it, shutting the Rein-deer in; these immediately run round the mountain, and at every turn are fired at by the hunters.

Sir Henry George Lyddell, Bart. brought with him from Lapland, in the year 1786, five Rein-deer, which he kept at his seat of Eslington Castle in Northumberland. They bred, and there was every prospect that they would succeed and even become prolific; but, unfortunately, some of them were killed, and others died in consequence of a disorder similar to that called the *rot* in sheep, supposed to have been occasioned by the richness of the grass on which they fed.

THE RED DEER*.

The elegance and beauty of this animal have always been much admired. Red Deer are natives of many parts of Europe, and are supposed to have originally

* See Plate viii. Fig. 2.

DESCRIPTION. The height of these animals at the shoulder, is about three feet and a half. The males only are horned; and the horns, which are much branched, are rounded through their whole length. The general colour of the hair is reddish

been introduced into this country from France. About a century back, however, they were found in a state of nature in many of the wild and mountainous parts of Wales; and Stags are sometimes seen in a wild state, even now, in the forests of Exmoor, in Devonshire, and the woods on the Tamar. There is here an annual stag-hunt, under the patronage of the Ackland family. Mr. Stackhouse, of Pendarvis in Cornwall, informs me, that he once saw a wild Hind that had been killed near Launceston. Red Deer are also still occasionally found in the Highlands of Scotland.

These animals live in herds of many females and their young, headed by one male. They frequent the forests, browsing on grass, or the leaves and buds of various trees.

The males only have horns, and these are always shed in the spring. During the first year, the young animals have no horns, but only a rough excrescence, covered with a thin, hairy skin, in place of them. In their second year the horns are straight, and without branches; during the following year they acquire two antlers or branches; and they generally have an additional one every year till their sixth, from which time the animals may be considered at maturity. When the Stag sheds his horns, he seeks the most retired places, and feeds only during the night; for otherwise the flies settle on the soft skin of the young horns, which is exquisitely tender, and keep the animal in continual torture. The place of the horn is, for a little time, occupied by a soft tumour full of blood, and is covered with a downy substance like velvet. This increases daily, and, at length, the antlers shoot out. The horns of the Stag are round through their whole length: this

brown on the upper, and white on the under parts of the body.

SYNONYMS. *Cervus elaphus*. *Linnaeus*.—Cerv, Beche, et Faon. *Buffon*.—Red Deer, Hart, or Stag. *Penn.*—*Bingley's Mem. of Brit. Quad. Pl.* 36.

constitutes a distinguishing characteristic betwixt them and the horns of the fallow deer; the latter, where they branch off, being flatted for the breadth of more than a hand.

The senses of smelling and hearing are, in this animal, remarkably acute. On the slightest alarm he lifts his head, erects his ears, and stands for a few minutes as if in a listening posture. Whenever he ventures upon unknown ground, or quits his native coverts, he first stops at the skirts of the plain to examine all around; he next turns against the wind, to examine by the smell if there be any enemy approaching. If a person happen to whistle or call out at a distance, the Stag is seen to stop short, in his slow, measured pace, and to gaze upon the stranger with a kind of awkward admiration: if the cunning animal perceive neither dogs nor fire-arms preparing against him, he goes slowly forward, unconcerned, and does not attempt to run away. Man is not the enemy he is most afraid of; on the contrary, he seems to be delighted with the sound of the shepherd's pipe; and the hunters sometimes make use of that instrument to allure the animal to its destruction.

When a herd of Deer have to pass a wide river, which they are able to do without much difficulty, they are said to rest their heads on each other's rumps. If the leader become fatigued, he retreats to the rear, and suffers the next in succession to take his place. They swim with so much ease, that a male has been known to venture out to sea in search of females, and to cross from one island to another, although at a distance of some leagues.

The Stag is very delicate in the choice of his pasture. When he has eaten a sufficiency, he retires to the covert of some thicket to chew the cud in security. His voice becomes stronger, louder, and more tremulous, as he advances in age; and, during the rutting time, it is even terrible. At this season he seems so transported with passion, that nothing can obstruct his fury; and, when

at bay, he keeps off the dogs with great intrepidity. Some years ago the duke of Cumberland caused a tiger and a Stag to be enclosed in the same area; and the Stag made so bold and furious a defence, that the tiger was at length obliged to give up the contest.

The natives of Louisiana hunt these animals both for food and as an amusement. This is sometimes done in companies, and sometimes alone. The hunter who goes out alone, furnishes himself with the dried head of a Stag, having part of the skin of the neck attached to it. This, a gun, and a branch of a tree or piece of a bush, are all that he has need of. When he approaches any of the wild Deer, he hides himself behind the bush, which he carries in his hand, and advances gently till he is within shot. If the animal appears alarmed, the hunter immediately counterfeits the Deers' calls to each other, and holds the head just above the bush: then lowering it towards the ground, and lifting it by turns, he so deceives the Stag by the appearance of a companion, that the animal seldom fails to come towards it; in which case the hunter fires into the hollow of his shoulder, and lays him dead on the spot.

When the hunters go in large parties, they form a wide crescent round one of these animals, the points of which may be half a mile asunder. Some of them approach the Stag, which runs, affrighted, to the other side; where, finding them on that part advancing, he immediately rushes back again. Thus he is driven from side to side, the crescent closing into a circle, and gradually approaching, till at length he is so much exhausted, that he quietly submits to be taken alive. It sometimes happens, however, that he has sufficient strength left to stand at bay; in which case he is seized from behind, but seldom in this case before some one is wounded. This mode of hunting is merely adopted as a recreation, and is called "the dance of the Deer."

The poet Thomson has left us a most animated description of the hunting of this animal in our island.

The Stag, too, singled from the herd, where long
 He ranged, the branching monarch of the shades,
 Before the tempest drives. At first, in speed,
 He, sprightly, puts his faith; and, roused by fear,
 Gives all his swift aërial soul to flight.
 Against the breeze he darts, that way the more
 To leave the lessening murderous cry behind.
 Deception short! though fleeter than the winds
 Blown o'er the keen-air'd mountains by the north,
 He bursts the thickets, glances through the glades,
 And plunges deep into the wildest wood.
 If slow, yet sure adhesive to the track,
 Hot streaming, up behind him come again
 Th' inhuman route, and from the shady depth
 Expel him, circling through his every shift.
 He sweeps the forest oft; and sobbing sees
 The glades, mild opening to the golden day;
 Where, in kind contest with his butting friends,
 He wont to struggle, or his loves enjoy.
 Oft in the full-descending flood he tries
 To lose the scent, and lave his burning sides;
 Oft seeks the herd: the watchful herd, alarm'd,
 With selfish care avoid a brother's woe.
 What shall he do? His once so vivid nerves,
 So full of buoyant spirit, now no more
 Inspire the course; but fainting breathless toil,
 Sick, seizes on his heart; he stands at bay;
 And puts his last, weak refuge in despair.
 The big round tears run down his dappled face;
 He groans in anguish; while the growling pack,
 Blood happy, hang at his fair-jutting chest,
 And mark his beauteous chequer'd sides with gore.

The Highland chiefs of former days were accustomed to hunt Red Deer with all the magnificence of Eastern monarchs. They sometimes assembled four or five thousand of their clan, who drove the Deer into toils, or to the station where the lairds had placed themselves: but as this was frequently made only a pretence to collect their vassals for rebellious purposes, an act of parliament was passed, which prohibited any assemblages of this nature.

Much has been said of the extreme long life of the Stag, and many wonderful stories have been related by naturalists respecting it; but there is reason to suppose

that this animal does not often reach the age of fifty years.

The females generally bring forth only one young-one at a time, and this about the end of May or beginning of June. They take care to hide their offspring in the most obscure thickets, for almost every creature is then a formidable enemy: the eagle, the falcon, the osprey, the wolf, the dog, and all the rapacious family of the cat-kind, are in continual employment to find out the retreat. But, what seems most unnatural, the Stag himself is an enemy, and the female is obliged to use all her arts to conceal her young-one from him, as from the most dangerous of her pursuers. At this season, therefore, the courage of the male seems transferred to the female: she defends it against her less formidable opponents, by force; and, when pursued by the hunter, she even offers herself, to mislead him from the principal object of her concern: she will fly before the hounds for many hours, and will then return to her young-one, whose life she has thus preserved at the hazard of her own.

THE FALLOW DEER¹

These animals associate in herds, which sometimes divide into two parties, and maintain obstinate battles for the possession of some favourite part of a park: each party has its leader, which is always the oldest and

See Plate viii. Fig. 3.

DESCRIPTION. The Fallow Deer is smaller than the Stag, of a brownish bay colour, whitish beneath, on the insides of the limbs, and beneath the tail. The horns, which are peculiar to the male, are very different from those of the stag: they are not branched, but are broader towards the upper part, and are divided into processes down the outside. A simple antler rises from the base of each, and a similar one at some distance from the first.

SYNONYMS. *Cervus dama.* Linn.—*Le Daim.* Buffon.—*Bingley's Mem. of Brit. Quad. Pl. 37.*

strongest of the flock. They attack in regular order of battle; they fight with courage, and mutually support each other; they retire, they rally, and seldom give up after one defeat. The combat is frequently renewed for many days together; till, after several defeats, the weaker party is obliged to give way, and leave the conquerors in possession of the object of their contention.

The Fallow Deer is easily tamed, and it feeds upon numerous vegetables which the stag refuses. When these animals drink, they plunge their noses, like some horses, very deep under water, and continue them in that situation for a considerable time; but, to obviate any inconvenience which that may occasion, says the Rev. Mr. White, in his Natural History of Selborne, they can open two vents, one at the inner corner of each eye, which have a communication with the nose. Here seems to be an extraordinary provision of nature worthy of our attention; for it appears as if these creatures would not be suffocated, though both their mouth and nostrils were stopped. This curious formation of the head may be of singular service to beasts of chase, by affording them free respiration: and no doubt these additional nostrils are thrown open when they are hard run. To this account, which was addressed in a letter to Mr. Pennant, that gentleman has thus replied: "I was much surprised to find in the *Antelope* something analagous to what you mention as so remarkable in Deer. This animal also has a long slit beneath each eye, which can be opened and shut at pleasure. On holding an orange to one, the creature made the same use of those orifices as of his nostrils; applying them to the fruit, and seeming to smell it through them."

The females produce one, sometimes two, and rarely three young-ones at a time. These arrive at perfection in three years, and live to the age of about twenty.

THE ROE*.

The figure of the Roe is more elegant than that of either of the preceding kinds of British Deer; and its vivacity of disposition and gracefulness of motion are scarcely to be exceeded. When pursued by the hunter, the Roebuck exhibits infinite fleetness and address. It is scarcely possible fairly to hunt him down; since he can continue the course for many hours without exhaustion. He is, therefore, seldom to be caught, except by surprise in the onset. When, however, he finds his first efforts to escape are likely to prove unsuccessful, he returns, and keeps the same track backward and forward, until, by various turnings and windings, he totally confounds the scent. Then, by one enormous bound, he is said to leap aside, lie flat on his belly among bushes or long grass, and suffer the dogs to pass close by his nose without offering to move.

In their wild state, the Roes generally love to range among the hills and in alpine valleys, near the borders of woods, into which they can fly for shelter and security whenever they are pursued by their foes. They do not, like the red and fallow deer, herd together in vast numbers; and they are seldom to be found but in small flocks or families, consisting of the two parents and their offspring, or, in the whole, of only from three to five individuals. They seldom or never allow strangers to intermix or associate with them. During the

* DESCRIPTION. The height of the Roe at the shoulders is about two feet and a half. The horns are six or eight inches in length, strong, upright, rugged, and divided towards their extremity into three points or branches. The face is dark, and the spaces bordering on the mouth and eyes are black. In summer the hair is short and smooth, and of a bright reddish colour on the upper parts of the body; but in winter it is long and thick. The chest, belly, and insides of the thighs are white.

SYNONYMS. *Cervus capreolus*. Linn.—Le Chevreuil. *Bufo*.—Roe Deer. *Smellie*.—*Bingley's Mem. of Brit. Quad. Pl.* 38.

summer months they feed chiefly on grass, but they are likewise fond of the *stone bramble**; and in winter, when the ground is covered with snow, they browse on the tender branches of the fir and birch-trees.

The period of gestation in these animals is about five months and a half; and they produce their offspring generally towards the end of April, or the beginning of May. Previously to this they drive off their former young-ones, to provide habitations, and to form societies for themselves. They then retire to some secure place in the woods, concealed from the observation of foxes, and other predacious animals, and there deposit their progeny. These are two in number, usually a male and a female.

Roebucks are natives of woody and mountainous countries, in various parts both of Europe and Asia. In former ages they were very common in many districts of Britain; but the few that are now left are chiefly confined to the Scottish Highlands.

OF THE GIRAFFE TRIBE †.

In the present tribe, of which only a single species has hitherto been discovered, the horns are simple, covered with skin, blunt at the ends, and each terminated by a tuft of black hair.

This animal, although nearly allied both to the Deer and Antelope tribes, is so remarkable in its structure, as, in an artificial system at least, to require a distinct classification.

THE GIRAFFE ‡.

This extremely singular quadruped is found only in

Rubus saxatilis, of Linnæus.

† In the lower jaw of the Giraffes there are eight broad and thin front-teeth, the outermost of which on each side, are each deeply divided into two lobes.

‡ See Plate vii. Fig. 6.

DESCRIPTION. The head of the Giraffe bears a considera-

the interior recesses of the forests, or upon the wildest plains, of Africa ; whence it is never taken alive, except when young, and where it is seldom even seen by European travellers.

When they stand with their head and neck perfectly erect, many of these animals measure sixteen or eighteen feet in height. In their native wilds this singular form gives them, at a distance, the appearance of decayed trees; and the deception is not a little aided by their colour, reddish white, marked with numerous large rusty spots.

They are of a mild and timid disposition. When pursued, they trot so fast that even a good horse is scarcely able to keep pace with them, and they continue their course for a long time without requiring rest. When they leap, they lift first their fore-legs, and then the hinder ones, in the manner of a horse whose fore-legs are tied together. Their general position, except when grazing, is with the head and neck erect. They feed principally on the leaves of trees, and particularly on those of a peculiar species of mimosa, that is common in the country where they are found, and to which the extreme length of their legs and neck admirably adapts them. When they feed from the ground, they are under the necessity of dividing their fore-legs to a considerable distance. In preparing to lie down, they kneel like the camel.

It has generally been supposed that the Giraffe pos-

ble resemblance to that of the horse, but is furnished with erect horns, about six inches long, and covered with a hairy skin: these are blunt, as though cut off at the ends, and each tufted with a brush of coarse black hairs. The neck is very long, thin, and erect, and has on the ridge a short, erect mane, which extends along the back, nearly to the origin of the tail. The shoulders are very deep, which has given rise to a vulgar error that the fore-legs are longer than the hind ones.

SYNONYMS. *Camelopardalis Giraffa*. Linn.—*Camelopardalis*, or *Camelopard*. Var.—*Giraffe*. Buffon.—*Shaw's Gen. Zool.* ii. tab. 181, 182.—*Bew. Quad.* p. 118.

sessed neither the power nor the strength to defend itself against the attacks of other animals: this, however, seems to be unfounded; for M. le Vaillant has asserted, that "by its kicks it frequently wearies, discourages, and distances even the Lion." The utility of the horns of the Giraffe appears to be hitherto unknown: this writer says, that they are not used as weapons of defence.

From divers accounts that have been left to us, this animal seems to have been known to the ancients. Heliodorus, the Greek bishop of Sicca, mentions it particularly in his time, and his description seems more original and authentic than those of most of the old writers.

"The ambassadors from the Axiomitæ (he says) brought presents to Hydaspes, and, among other things, there was an animal of a strange and wonderful species, about the size of a camel, which had its skin marked with florid spots. The hinder parts, from the loins, were low, like those of a lion; but the shoulders, forefeet, and breast, were elevated above proportion to the other parts. The neck was small, and lengthened out from its large body like that of a swan. The head, in form, resembled a camel, but was, in size, about twice that of the Lybian ostrich, and it rolled the eyes, which had a film over them, very frightfully. It differed in its gait from every other land or water-animal, and waddled in a remarkable manner. Each leg did not move alternately; but those on the right side moved together, independently of the other, and those of the left in the same manner, so that each side was alternately elevated. This animal was so tractable as to be led by a small string fastened to its head, and the keeper could conduct it wherever he pleased, as if with the strongest chain. When the animal appeared, it struck the whole multitude with terror; and it took its name from the principal parts of its body, being called by the people, extempore, *Camelopardalis*."

A Giraffe appears to have been brought to Cairo in

the year 1507; for Baumgarten says, that "on the 26th of October, in that year, on looking out at a window he saw the Ziraphus, the tallest creature that he ever beheld. Its skin was all over white and brown, and its neck was almost two fathoms long. Its head was a cubit long, and its eyes looked brisk and lively; its breast was upright, and its back low; it would eat bread or fruits, or any thing else they reached to it."

In the year 1769, the Dutch governor of the Cape of Good Hope sent out some parties of men on inland discoveries. One of these parties, after having crossed many mountains and plains, found two Giraffes, an old and a young one. They seized the latter, and were desirous of conveying it alive to Cape Town, but it died before their arrival. They, however, skinned it, and the skin was afterwards sent to Europe, and lodged in the Cabinet of Natural History at Leyden.

The flesh of the young Giraffe is said to be good eating. The Hottentots hunt the animal principally on account of its marrow, which, as a delicacy, they set a high value upon.

OF THE ANTELOPES IN GENERAL.*

The Antelopes are an elegant and active tribe of animals, which inhabit mountainous countries. There they bound among the rocks with so much lightness and elasticity, as to strike the spectator with astonishment. They browse like goats, and frequently feed on the tender shoots of trees. In disposition they are

* The males are furnished with hollow horns, (seated on a bony core,) growing upwards, permanent, and annulated or wreathed. In both sexes there are eight front teeth in the lower jaw; and there are no canine teeth either above or below.

Linnæus included the Antelopes in the Goat tribe, which they resemble in their horns; but they are now properly separated into an intermediate tribe betwixt the Goats and the Deer.

timid and restless, and the Creator has bestowed on them long and tendinous legs, peculiarly appropriated to their habits and manners of life. These, in some of the species, are so slender and brittle as to snap with a very trifling blow: the Arabs, taking advantage of this circumstance, catch them by throwing at them sticks, by which their legs are entangled and broken.

The eyes of the Antelope are the standard of perfection in the East: to say of a fine woman that "she has the eyes of an Antelope," is considered the highest compliment that can be paid to her.

THE CHAMOIS

These animals, inhabitants chiefly of the Alps and the Pyrenees, are found in flocks of from four to eighty, and even a hundred in number, dispersed upon the crags of the mountains. They do not feed indiscriminately, but only on the most delicate herbage they can find.

Their sight is very penetrating, and their senses of smelling and hearing are remarkably acute. When the wind blows in a proper direction, they are said to be able to scent a man at the distance of a mile or upwards. Their voice somewhat resembles that of a

* See Plate viii. Fig. 4.

DESCRIPTION. The Chamois is about the size of the common goat, and is of a dusky yellowish brown colour, with the cheeks, chin, throat, and belly, of a yellowish white. The horns are slender, upright, about eight inches high, and hooked backwards at the tips: their colour is black. At the back part of the base of each horn there is a tolerably large orifice in the skin, the nature and use of which do not yet seem to be clearly understood. The hair is rather long; and the tail short and of a blackish colour. The eyes are round, sparkling, and full of animation.

SYNONYMS. Antilope rupicapra. *Linnaeus*.—Chamois Goat. *Bewick*.—Chamois. *Buffon*.—*Pennant*.—*Stuart's Gen. Zool.* ii. tab. 187.—*Bew. Quæd.* p. 81.

hoarse domestic goat: by means of this they are called together. When alarmed they adopt a different noise, and advertise each other by a kind of whistle. This the animal on watch continues as long as he can blow without taking breath: it is at first sharp, but flattens towards the conclusion. He then stops for a moment, looks round on all sides, and begins whistling afresh, which he continues from time to time. This is done with such force, that the rocks and forests re-echo the sound. His agitation is extreme. He strikes the earth with his feet. He leaps upon the highest stones he can find, again looks round, leaps from one place to another, and, when he discovers any thing seriously alarming, flies off. This whistling is performed through the nostrils, and consists of a strong blowing, similar to the sound which a man may make by fixing his tongue to the palate, with his teeth nearly shut, his lips open and somewhat extended, and blowing long, and with great force.

The Chamois scramble with astonishing agility among the inaccessible rocks of the country which they inhabit. They neither ascend nor descend perpendicularly, but always in an oblique direction. When descending, in particular, they will throw themselves down across a rock, which is nearly perpendicular, and twenty or thirty feet in height, without having a single prop to support their feet. In descending, they strike their feet three or four times against the rock, till they arrive at a proper resting-place below. The spring of their tendons is so great, that, when leaping about among the precipices, one would almost imagine that they possessed wings instead of limbs.

They are hunted during the winter for their skins, which are very useful in manufactures; and for their flesh, which is good eating. The chase of these animals is a laborious employment, as much care is necessary in order to get near them. They are shot with rifle-barrelled guns. They generally produce

two young-ones at a birth; and are said to be long-lived.

THE NYL-GHAU

Although the Nyl-ghau is reported to be an exceedingly vicious creature, yet one of these animals which was in the possession of Dr. William Hunter, was quite tame and docile. It was pleased with every kind of familiarity, always licked the hand which either stroked it or gave it bread, and never once attempted to use its horns offensively. It seemed to have much dependence on the organs of smell, and snuffed keenly, and with considerable noise, whenever any person came within sight. It did the same when food or drink was brought to it; and was so easily offended with an uncommon smell, or was so cautious, that it would not taste bread that was offered with a hand that had touched oil of turpentine or spirits.

In February, 1820, there was a Nyl-ghau in the exhibition-rooms at Exeter 'Change. It had been there six years, and was tolerably docile, but capricious and not to be depended upon.

The manner in which these animals fight is very

See Plate ii. Fig. 5.

DESCRIPTION. The height of the Nyl-ghau is somewhat more than four feet at the shoulder. The male is of a dark gray colour, and furnished with short, blunt horns, that bend a little forward. There are white spots on the neck, between the fore-legs, on each side behind the shoulder-joints, and on each fore foot. The female, which is destitute of horns, is of a pale brown colour, with two white and three black bars on the fore part of each foot, immediately above the hoofs. On the neck and part of the back of each is a short mane; and the fore part of the throat has a long tuft of black hairs. The tail is long, and tufted at the end.

SYNONYMS. Antelope picta. *Linn.*—White-footed Antelope. *Penn.*—Nyl-ghau, which, in Persian, signifies a blue Cow or Bull.—Nil-gaut. *Buffon.*—*Shaw's Gen. Zool.* ii. tab. 89. —*Bew. Quad.* p. 112.

particular. This was observed at lord Clive's, where two males were put into a little enclosure. While they were at a considerable distance from each other they prepared for the attack by falling down upon their fore knees, and when they came within a few yards they made a spring, and darted against each other.

At the time that two Nyl-ghaus were in his stable, Dr. Hunter observed, that whenever any one approached them with a hostile appearance, they immediately fell upon their fore knees, and sometimes they would do so when he came before them; but as they never darted forward, he so little supposed this to be a hostile posture, that he rather supposed it to be expressive of a timid or obsequious humility.

The force with which the Nyl-ghau can dart against any object, may be conceived from the following anecdote that has been related of one of the finest of these animals that has ever been seen in England. A labouring man, without knowing that the animal was near him, and therefore neither meaning to offend, nor suspecting that he was exposed to any danger, came to the outside of the pales of the enclosure where it was kept: the Nyl-ghau, with the swiftness of lightning, darted against the woodwork, and with such violence, that he shattered it to pieces, and broke off one of his horns close to the root. This violence, it is supposed, occasioned his death, for he died not long afterwards. From this it appears, that at certain seasons the animal is vicious and fierce, however gentle it may be at other times.

The first of this species that were brought into England were a male and female, sent from Bombay as a present to lord Clive, in 1767. They bred every year. Afterwards two others were sent over, and were presented to the queen by Mr. Sullivan. These were the two above described.

The Nyl-ghau is seldom found wild in any of the parts of India where we have settlements: such animals as are seen there have been brought from the distant

interior parts of the country. Bernier mentions them in his travels from Delhi to the province of Cachemire. He describes the emperor's amusement of hunting them, and says that sometimes great numbers of them are killed. In several parts of the East they are considered as royal game, and are only hunted by the princes.

THE SCYTHIAN ANTELOPE

Several dreary and open deserts about Mount Caucasus and the Caspian Sea, and in Siberia, are frequented by these animals. They chiefly confine themselves to countries where there are salt springs; for on the plants that grow near these, and on salt, they principally feed. While feeding they frequently walk backward and pluck the grass on each side. They are migratory, collecting towards the end of autumn in flocks, which consist of some thousands, and retiring into the southern deserts. In spring they divide again into little flocks, and return to the north.

It seldom happens that a whole flock lies down to rest all at the same time; some of the animals are generally stationed on watch. When these are tired, they give a kind of notice to such as have taken their rest, who instantly rise, and relieve the sentinels of the preceding hours. By this means they often preserve themselves from the attacks of wolves, and from the insidious stratagems of hunters. They are so

* **DESCRIPTION.** The Scythian Antelope is about the size of the Fallow Deer, and of a gray yellowish colour. The horns are annulated, about a foot long, and bent in the form of a lyre. The head is somewhat large, and the neck slender. The tail is about four inches long; naked below, clothed above with upright hairs, and ending in a tuft. The females are without horns.

SYNONYMS. Antelope Saiga. *Linnaeus*.—Saiga. *Buffon*.—*Shaw*.—Scythian Antelope. *Pennant*.

swift, that they are able for a while to outrun the fleetest horse or greyhound; yet such is their extreme timidity and shortness of breath, that they are soon caught. If they be only bitten by a dog, they instantly fall down, and will not again attempt to rise. In running they seem to incline on one side; and their fleetness is for a short time so astonishing, that their feet appear scarcely to touch the ground. In consequence of the heat of the sun, and the reflection of its rays from the sandy plains which they frequent, they become in summer almost blind. In a wild state they seem to have no voice, but when they are brought up tame the young-ones emit a sort of bleating, like sheep.

OF THE GOAT TRIBE IN GENERAL*.

The animals of the Goat kind live principally in retired mountainous situations, and have a rank and unpleasant smell, especially the males. Although very shy and timid in a wild state, they are easily rendered domestic, and even familiar. They differ from sheep not only in the erect position of their horns, but also, when they fight, in rising on their hind legs, and turning their head on one side to strike; for rams run full tilt at each other, with their heads down.

THE COMMON GOAT†.

The Goat is a lively, playful animal, and easily familiarized; being sensible of caresses, and capable of a

* The horns of these animals are hollow, rough, and compressed: they rise somewhat erect from the top of the head, and bend backwards. In the lower jaw there are eight front-teeth, and in the upper jaw none; and no canine-teeth in either. The chin is bearded.

† SYNONYMS. *Capra Hircus*. Linn.—Bouc et Chevre. Buffon. *Shaw's Gen. Zool.* ii. tab. 199. *Bew. Quad.* p. 77.

considerable degree of attachment. His disposition, however, is extremely inconstant, which is marked by the irregularity of all his actions: he walks, stops short, runs, leaps, approaches or retires, shows or conceals himself, or flies off, as if actuated by mere caprice, and without any other cause than what arises from the eccentric vivacity of his temper. In some instances these animals, from their extreme familiarity, have become troublesome. "In the year 1698, (says M. de Buffon,) an English vessel having put into the harbour of the island of Bonavista, two negroes went on board, and offered the captain as many Goats as he chose to carry away. He expressed his surprise at this offer; but the negroes informed him that there were only twelve persons on the island, and that the Goats multiplied so fast as to become exceedingly troublesome; for, instead of being difficult to catch, they followed the people about like domestic animals, with an unpleasant degree of obstinacy."

Goats love to feed on the tops of hills, and prefer the very elevated and rugged parts of mountains: they find sufficient nourishment even in the most heathy and barren grounds. These animals are so active that they are able to leap with ease, and with the utmost security, among the most dreadful precipices: and even when two of them are yoked together, they will, as it were by mutual consent, take the most dangerous leaps, and exert their efforts in such perfect unison as generally to accomplish them unhurt.

In mountainous countries they render considerable service to mankind: the flesh of the old ones is salted as winter provision, and their milk is used in many places for the making of cheese. The flesh of the Kid is equal in flavour to the most delicate lamb.

M. Sonnini, in his edition of Buffon's Natural History, has given us a curious instance of the readiness with which the Goat will permit itself to be sucked by animals of a different kind, and far larger size, than itself. He assures us that he saw, in the year 1780, a foal, that

had lost its mother, thus nourished by a Goat, which was placed on a barrel, in order that the foal might suck with greater convenience. The foal followed its nurse to pasture, as it would have done its parent, and was attended with the greatest care by the Goat, which always called it back by her bleatings, when it wandered to any distance from her.

Goats are exceedingly numerous in South Guinea; and some of the negroes there have a singular notion that their strong and offensive smell was given to them, as a punishment, for having requested of a certain female deity, that they might be allowed to anoint themselves with a kind of aromatic ointment which she used herself. Offended at the request, they say, she took a box containing a most nauseous compound, and rubbed their bodies with it; and that this had so powerful an effect, as to cause the unpleasant smell thence produced to continue ever afterwards

THE IBEX*.

These animals assemble in flocks, consisting sometimes of ten or fifteen, but generally of smaller numbers. They feed during the night in the highest woods; but at sun-rise they quit the woods, and ascend the mountains, feeding in their progress, till they have reached the most considerable heights. They are generally seen on the sides of the mountains which

* See Plate viii. Fig. 5.

DESCRIPTION. The male Ibex is larger than the tame Goat, but resembles it much in appearance. The head, in proportion to the body, is small. The eyes are large, round, and brilliant. The horns are large, weighing sometimes sixteen or eighteen pounds, and measuring from two to four feet in length: they are flattened before, round behind, and divided by several transverse ridges; are bent backward, and of a dusky brown colour. The beard is long, the legs are slender, and the body is short, thick, and strong. The tail is short, and naked beneath. The hair is long, and of a brownish or

face the east or south, and they lie down in the highest places and hottest exposures; but when the sun is declining, they again begin to feed and to descend towards the woods; whither they also retire when it is likely to snow, and where they always pass the winter.

The males that are six years old and upwards, haunt more elevated places than the females and younger animals; and, as they advance in age, they become more inclined to solitude. They also become gradually hardened against the effects of extreme cold, and frequently live entirely alone.

The season for hunting the Ibex is during the months of August and September, when they are usually in good condition. None but the inhabitants of the mountains engage in this chase; for it not only requires a head that can bear to look down from the most tremendous heights without terror, but address, and sure-footedness in the most difficult and dangerous passes, and also much strength, vigour, and activity. Two or three hunters usually associate in the perilous occupation: they are armed with rifle-barrelled guns, and furnished with small bags of provisions; they erect a miserable hut of turf among the heights, where, without fire or covering, they pass the night; and, on waking in the morning, they not unfrequently find the entrance blocked up with snow three or four feet deep. Sometimes, in pursuit of this animal, being overtaken by darkness, amid crags and precipices, they are obliged

ash-colour, with a streak of black running along the back. The belly and thighs are of a delicate fawn-colour.—The female is about a third less than the male, and not so corpulent. Her colour is less tawny, and her horns not above eight inches long.

SYNONYMS. *Capra Ibex*. *Linn.*—Bouquetin, Bouc-estain, et Bouc-stein. *Buffon.*—Rock Goat, or Wild Goat. *Smellie.*—Stein Bock. *Gesner.*—*Shaw's Gen. Zool.* ii. tab. 198. *Bew. Quad.* p. 80.

to pass the whole night standing, and embraced together, in order to support each other, and to prevent themselves from sleeping.

As the animals ascend into the highest regions very early in the morning, it is necessary to gain the heights before them, otherwise they scent the hunters, and betake themselves to flight. It would then be in vain to follow them; for, when once they begin to escape, they never stop till they are entirely out of danger, and they will even sometimes run for ten or twelve leagues before they rest.

Being very strong, when they are close pressed they not unfrequently turn upon the incautious huntsman, and tumble him down the precipice, unless he has time to throw himself upon the ground, and let the animal pass over him. It is said also, that when they cannot otherwise avoid the hunter, these animals will cast themselves down the steepest precipices, and fall on their horns in such a manner as to escape unhurt. It is even pretended, that, to get out of the reach of huntsmen, they will hang by their horns over the precipices, on some projecting tree, and remain suspended till the danger is over.

The Ibex can mount a perpendicular rock fifteen feet high, at three leaps, or rather at three successive bounds of five feet each. It does not seem as if he found any footing on the rock: he appears to touch it merely to be repelled, like an elastic substance striking against a hard body. He is not supposed to take more than three successive leaps in this manner. If he be between two rocks which are near each other, and he want to reach the top, he leaps alternately from the side of one rock to that of the other, till he has attained the summit. The fore-legs being considerably shorter than the hinder ones, enable these animals to ascend with much more ease than to descend; and on this account it is that nothing but the severest weather will induce them to go down into the valleys.

Their voice is a short, sharp whistle, not much unlike

that of the chamois: sometimes they make a kind of snort, by breathing hard through their nostrils, and when young they bleat.

The female exhibits the greatest tenderness and attachment for her offspring, and will defend it even against the attacks of wolves and eagles.

OF SHEEP IN GENERAL*.

Few animals render greater or more essential services to mankind than the Sheep. They supply us with both food and clothing; and the wool alone of the common Sheep affords, in some countries, an astonishing source of industry and wealth. These are all harmless animals, and, in general, exceedingly shy and timid. Both in running and leaping they exhibit much less activity than the goats. They collect, in a wild state, into small flocks; and, though they do not altogether avoid the mountains, they generally prefer dry and open plains. They fight by butting against each other with their horns, and threaten by stamping on the ground with their feet. Their period of gestation is about five months, and the females usually produce one, sometimes two, and rarely three young-ones at a birth.

There are, strictly speaking, only *two* different species of Sheep: but of the common Sheep there are no fewer than ten or twelve very distinct varieties.

THE COMMON SHEEP†.

Sheep are highly useful animals. When enslaved by

* The horns of Sheep are hollow, wrinkled, and perennial; bent backward and outward into a circular or spiral form, generally at the sides of the head. The lower jaw has eight front-teeth: there are no teeth in the upper jaw, nor any canine teeth in either.

† SYNONYMS. *Ovis Aries*. *Linnaeus*.—*Brebis* et *Belier*.

man, they tremble at the voice of the shepherd or his dog; but, on the extensive mountains where they range almost without control, and where they seldom depend on the aid of the shepherd, they assume a very different mode of conduct. In these situations a Ram or a Wether will boldly attack a single dog, and often come off victorious; but, when the danger is more alarming, they have recourse to the collected strength of the whole flock. On such occasions they draw up into a body, and place the females and young-ones in the centre, whilst the males take the foremost ranks, keeping close by each other. Thus an armed front is presented on all quarters, that cannot easily be attacked without danger of destruction to the assailant. In this manner they wait with firmness the approach of the enemy: nor does their courage fail them in the moment of attack; for, when the aggressor advances within a few yards of the line, the Rams dart upon him with such impetuosity as to lay him dead at their feet, unless he save himself by timely flight. Against the attacks of single dogs, or foxes, when in this situation, they are perfectly secure. A single Ram, regardless of danger, will sometimes engage a bull; and, his forehead being much harder than that of any other animal, he seldom fails to conquer; for the bull, by lowering his head, receives the stroke of the Ram between his eyes, which usually brings him to the ground.

The Sheep, in the mountainous parts of Wales, where the liberty they enjoy is so great as to render them very wild, do not always collect into large flocks, but sometimes graze in parties of from eight to a dozen, of which one is stationed at a distance from the rest, to give notice of the approach of danger. When the sentinel observes any one advancing, at the distance of two or three hundred yards, he turns his face to the

en my, keeping a watchful eye upon his motions, and allowing him to approach as near as eighty or a hundred yards; but, when the suspected foe manifests a design of coming nearer, the watchful guard alarms his comrades by a loud hiss or whistle, twice or thrice repeated, when the whole party instantly scour away with great agility, always seeking the steepest and most inaccessible parts of the mountains.

It is very singular that in the Holms round Kirkwall, in the island of Mainland, one of the Orkneys, if a person about the lambing-time enters with a dog, the Ewes suddenly take fright, and through the influence of fear, as it is imagined, they instantly drop down dead, as though their brain had been pierced with a musket-ball.

No country produces finer Sheep than great Britain; and their fleeces are large, and well adapted to the various purposes of clothing. Of these, the Sheep that are bred in Lincolnshire and the northern counties are most remarkable for their size, and for the quantity of wool which they bear. In other parts of England they are generally smaller; and in the mountainous districts of Wales and Scotland they are very small.

Besides the fleece, there is scarcely any part of this animal but what is useful to mankind. The flesh is a delicate and wholesome food. The skin, dressed, forms different parts of our apparel; and is used for the covers of books. The entrails, properly prepared and twisted, serve for strings to various kinds of musical instruments. The bones, calcined, form materials for tests for the refiner. The milk is thicker than that of cows, and consequently yields a greater quantity of butter and cheese; and in some places is so rich, as not to produce the cheese without a mixture of water to make it part from the whey.

There are in the voices of all animals innumerable tones, perfectly understood by each other, and entirely beyond our powers of discrimination. It should seem somewhat remarkable that the Ewe can always dis-

tinguish her own Lamb, and the Lamb its mother, even in the largest flocks. And at the time of shearing, when the Ewes are shut up in a pen from the Lambs, and turned loose one by one as they are shorn, it is pleasing to see the meeting between each mother and her young-one. The Ewe immediately bleats to call her Lamb, which instantly obeys the well-known voice, and, returning the bleat, comes skipping to her. At first it is startled by her new appearance, and approaches her with some degree of fear, till it has corrected the sense of sight by those of smelling and hearing.

Various sorts of insects infest the Sheep, but that which is the most teasing to them is a species of gad-fly, (the *oestrus ovis* of Linnæus,) that deposits its eggs on the inner margins of their nostrils, occasioning them to shake their heads violently, and thrust their noses into the dust or gravel. The larvæ, or grubs of these insects, when hatched, crawl up into the frontal sinuses, and, after they are full fed and ready to undergo their change, they are again discharged through the nostrils. The French shepherds have a practice of relieving the Sheep by trepanning them, and taking out the maggot: this is sometimes practised in England, but not always with success. Sheep have, besides this, a kind of tick (*acarus reduvius*) amongst their wool, and are subject to a species of fluke-worms (*fasciola hepatica*) in the liver.

The Icelandic Sheep.*

The Icelandic or many-horned Sheep differ from ours in several particulars. They have straight, upright ears, a small tail, and sometimes four or five horns.

In a few instances these animals are kept in stables

SYNONYMS. *Ovis Aries polycerata*. Linn.—Many-horned Sheep, and Icelandic Sheep. Penn.—Bew. Quad. p. 72.

during winter ; but by far the greatest number of them are left to seek their own food in the open plains. In stormy weather they hide themselves in caves from the fury of the elements ; but when retreats of this kind are not to be found, they collect together during the heavy falls of snow, and place their heads near each other, with their muzzles downward towards the ground. This not only prevents their being so easily buried under the snow as they otherwise would be, but, in many cases, enables their owner to discover them. In such situations they will sometimes remain for several days ; and there have been many instances of hunger forcing them to gnaw each other's wool. After the storm has ceased, they are sought for and disengaged.

A good Icelandic Sheep will yield from two to six quarts of milk a day ; and of this the inhabitants make butter and cheese. But the chief profit is derived from their wool, which is not shorn, but remains on till the end of May, when it loosens of itself, and is stripped off at once, like a skin. The whole body is by this time covered again with new wool, which is short and extremely fine. It continues to grow during the summer, and becomes towards autumn of a coarser texture, is very shaggy, and somewhat resembles camel's hair. This covering enables the Sheep to support the rigours of winter ; but if, after they have lost their fleece, the spring prove wet, the inhabitants sew a piece of coarse cloth round the stomachs of the weakest, to guard them against its ill effects.

The Broad-tailed Sheep.*

In their general appearance, with the exception of the tail, these animals do not much differ from the European Sheep. The tail, however, is so large, as

* SYNONYMS. *Ovis Aries laticaudata.* Linn.—Mouton de Barbarie, Mouton d'Arabie. Buffon.—Broad-tailed Sheep. Penn.

sometimes to weigh nearly one third of the whole carcass. It is entirely composed of a substance betwixt marrow and fat, which serves for culinary purposes instead of butter; and, being cut into small pieces, makes an ingredient in various dishes. When the animal is young, this is little inferior to the best marrow.

Sheep of this description are usually kept in yards, so as to be in little danger of injuring their tails as they walk about; but when they run in the fields, the shepherds, in several parts of Syria, fix a thin piece of board on the under part, and to this board are sometimes added small wheels: whence, with a little exaggeration, we have the story of the Oriental sheep having carts to carry their tails.

Their fleeces are exceedingly fine, long, and beautiful; and, in Thibet are worked into shawls, which form a considerable source of wealth to the inhabitants. These Sheep are found in the neighbourhood of Aleppo; in Barbary, Ethiopia, and some others of the eastern countries.

THE ARGALI*.

*The Argali abound in Kamtschatka, where they supply the inhabitants both with food and clothing. Their flesh, and particularly their fat, are esteemed by the

* DESCRIPTION. The Argali, or wild Sheep, have large horns, arched semicircularly backward, and divergent at their tips; wrinkled on their upper surface, and flatted beneath. On the neck are two pendent hairy dew-laps. This Sheep is about the size of a small deer, and in summer is of a brownish ash-colour, mixed with gray on the upper parts, and whitish beneath. In winter the former changes to a rusty, and the latter to a whitish gray; and the hair becomes considerably longer. The horns of some of the old Rams are said to be of such an enormous size, as to weigh fifteen or sixteen pounds each.

SYNONYMS. *Ovis Ammon*. *Linnaeus*.—*Mouflon*. *Buffon*.—Wild Sheep, and Siberian Goat. *Penn.*—*Shaw's Gen. Zool.* ii. tab. 201.—*Bew. Quad.* p. 74.

Kamtschadales as diet fit for the gods; and there is no labour which this people will not undergo in the chase of these animals. Whole families abandon their habitations in the spring of the year, and occupy the entire summer in this employment, amidst the steepest and most rocky mountains, fearless of the dreadful precipices which often overwhelm the eager sportsman.

These animals are shot with guns or with arrows; sometimes with cross-bows placed in their paths. They are sometimes chased by dogs, but their fleetness leaves these far in the rear. The purpose, however, is answered: they are driven to the heights, where they often stand and view, as it were with contempt, the dogs below: while their attention is thus occupied, the hunter creeps cautiously within reach, and brings them down with his gun.

In some of the other northern countries a great multitude of horses and dogs are collected together, and a sudden attempt is made to surround them. But great caution is requisite; for, if the animals, either by sight or smell, perceive the approach of their enemies, they instantly escape, and secure themselves among the lofty and inaccessible summits of the mountains.

Besides Kamtschatka, the Argali are found in all the alpine regions of the centre of Asia; and on the highest mountains of Barbary, Corsica, and Greece.

OF OXEN IN GENERAL*.

The animals of this tribe are seldom found except in low and rich pastures and plains, or in swamps and morassy grounds. In size and bulk they exceed all the British quadrupeds except the horse. Their services to mankind are more considerable than those even

* In the Oxen the horns are concave, smooth, and turned outward, and forward, in a semilunar form. In the lower jaw there are eight front teeth; there are none in the upper, and no tusks in either jaw.

of the sheep; for, in addition to the qualifications of the latter, they are employed as beasts of draught and burden. Their voice is called *lowing* and *bellowing*. They fight by pushing with their horns, and kicking with their feet.

There are about *nine* species; but many of these are so nearly connected, as to render it difficult for the naturalist to assign a proper distinction between them.

THE COMMON OX

From this animal are derived the numerous varieties of cattle that are found in various parts both of the old and new continent. In its wild state it is distinguished by its great size, and the shagginess of its hair, which, about the head, neck, and shoulders, is sometimes so long as to reach almost to the ground. The horns of the wild Ox are short, sharp-pointed, strong, and stand distant from their bases. The general colour of its body is either a dark or a yellowish brown. The limbs are strong, and the whole aspect savage and gloomy. Wild Oxen are found in the marshy forests of Poland, among the Carpathian Mountains, in Lithuania, and also in several parts of Asia.

In Lord Tankerville's park, at Chillingham, near Berwick-upon-Tweed, there is a breed of wild cattle, probably the only remains of the true and genuine breed of that species at present found in this kingdom†.

* **SYNONYMS.** *Bos taurus.* *Linnaeus.*—*Le Bœuf.* *Buffon.*—*Bingley's Mem. of Brit. Quad. Plates No. 41, Var. 1, 2, 3, 4, 5, 6, and 7.*

† The colour of this animal is invariably white; the muzzle is black; and the whole inside of the ear, and about one-third part of the outside, from the tip downwards, red. The horns are white, with black tips, very fine, and bent downwards. The weight of the Bulls is from thirty-five to forty-five stone, and of the Cows, from twenty-five to thirty-five, 14*lb.* to the stone.

At the first appearance of any person near them, these animals set off in full gallop, and, at the distance of two or three hundred yards, wheel round and come boldly up again, tossing their heads in a menacing manner. On a sudden they make a full stop at the distance of forty or fifty yards, and look wildly at the object of their surprise; but, on the least motion they all turn round, and gallop off again with equal speed, but not to the same distance, forming a smaller circle; and again returning with a bolder and more threatening aspect than before, they approach much nearer, probably within thirty yards, when they make another stand, and again gallop off. This they do several times, shortening their distance, and advancing nearer till they come within a few yards, when most persons consider it prudent to leave them, not choosing to provoke them further, as it is probable that, in a few turns more, they would make an attack.

The mode of killing these animals, as it was practised a few years ago, was the only remains of the grandeur of ancient hunting that existed in this country. On notice being given that a wild Bull would be killed on a certain day, the inhabitants of the neighbourhood assembled, sometimes to the number of a hundred horsemen, and four or five hundred foot, all armed with guns or other weapons. Those on foot stood upon the walls, or got into trees, while the horsemen rode off a Bull from the rest of the herd, until he stood at bay, when they dismounted and fired. At some of these huntings twenty or thirty shots have been fired before the animal was subdued. On such occasions the bleeding victim grew desperately furious, from the smarting of his wounds, and the shouts of savage joy echoing from every side. But from the number of accidents which happened, this dangerous mode has not of late been practised; the park-keeper now generally kills them with a rifle-gun.

When the Cows calve, they hide their young-ones for

a week or ten days in some sequestered retreat, and go to suckle them two or three times in a day. If any person comes near one of the Calves, it crouches close upon the ground, and endeavours to hide itself. This seems a proof of the native wildness of these animals, and it is corroborated by the following circumstance that happened to Dr. Fuller, the author of the History of Berwick, who found a hidden Calf two days old, very lean and weak. On his stroking its head it got up, pawed two or three times like an old Bull, bellowed very loud, went back a few steps, and bolted at his legs with all its force: it then began to paw again, bellowed, stepped back, and bolted as before. But being aware of its intentions, he moved aside, and it missed its aim, fell, and was so weak, that though it made several efforts it was not able to rise. It, however, had done enough; the whole herd was alarmed, and, coming to its rescue, obliged him to retire.

When any one of these animals happens to be wounded, or is grown weak and feeble through age or sickness, the rest of the herd set upon and gore it to death.

There is scarcely any part of the Ox that is not of some use to mankind. Boxes, combs, knife-handles, and drinking vessels, are made of the horns. The horns, when softened with boiling water, become so pliable as to be rendered capable of being formed into transparent plates for lanterns; an invention ascribed to king Alfred, who is said to have first used lanterns of this description, to preserve his candle time-measurers from the wind. Glue is made of the cartilages, gristles, and the finer pieces of cuttings and parings of the hides, boiled in water till they become gelatinous, and then dried. The bones of Oxen constitute a cheap substitute for ivory. The thinnest of the Calves-skins are manufactured into vellum. The blood is used as the basis of Prussian-blue. The hair is valuable in various manufactures; and the suet, fat, and tallow, are

made into candles. The utility of the milk and cream is well known.

From the circumstance of these animals furnishing the Gentoos with milk, butter, and cheese, their favourite food, that people entertain for them a superstitious veneration. There is scarcely a Gentoos to be found who would not, were he under a forced option, prefer sacrificing his parents or children to the slaying of a Bull or a Cow. Believing in the doctrine of transmigration, they are also alarmed at the idea of injuring the souls of those of their fellow-creatures that have taken their abode in these animal cases. This also tends to restrain them from destroying, designedly, any of the brute creation, and to prevent them from disposing any being of that life which God alone can give; and they respect it in the flea equally with the elephant.

I cannot conclude the present article without a remark on the barbarous mode of slaughtering Oxen adopted in this country. Drawn with his horns to a ring, this wretched animal has his head sometimes shattered to pieces by the butcher's axe before he falls. Three or four blows are often insufficient to deprive him of sensation, and it not unfrequently happens, that after the first or second blow he breaks loose from his murderers, and has to be seized and tied up afresh. Those who have heard his groans and bellowings on these occasions, will easily be convinced of the agony he undergoes. The Portuguese slay their Oxen by passing a sharp knife through the vertebræ of the neck into the spine, which causes instant death. Lord Somerville took with him to Lisbon a person to be instructed in this method of "laying down cattle," as it is termed there: this he did in the hope that our slaughtermen might be induced to adopt the same mode; but, with unheard-of stupidity and prejudice, they have hitherto refused to adopt it; nor will they probably ever do it, unless compelled by an act of the legislature.

THE ARNEE*.

This is by far the largest animal of the cattle tribe that has hitherto been discovered, its usual height being from twelve to fifteen feet. It is an inhabitant of various parts of India north of Bengal, and is very seldom seen within the European settlements.

A herd of Arnees was, not many years ago, observed by a body of British troops, in one of the inland provinces of Hindostan, and they excited no small alarm in the whole corps. The herd no sooner perceived the men advancing, than they lifted up their heads, ran off to a small distance, then wheeled about, seemingly to reconnoitre; and, advancing in a body as if to attack, had such a formidable and warlike appearance, and withal of a kind so entirely new, that no person present could form an idea what it might mean. Their horns, each at least two feet long, rose to a great height in the air, and did not permit the troops to see distinctly whether men were mounted on the animals or not; but in a short time they galloped off and disappeared.

In the year 1790 or 1791, the crew of the Hawkesbury East Indiaman, whilst she was going up the river Ganges, and at the distance of about fifty miles below Calcutta, observed one of these animals floating in the river, still alive. A boat was immediately hoisted out, in order to chase it. A noose was soon thrown across its horns; and the Arnee was dragged to the ship's side, hoisted on deck, killed, cut up, and afterwards cooked for the use of the ship's company, who found its flesh to be a most delicate food. The animal was as

* DESCRIPTION. The horns of the Arnee are long, erect, and semilunar, flattened and annularly wrinkled, with smooth, round, approaching points. A British officer, who found one of these animals in the woods in the country above Bengal, says, that its form seemed to partake of those of a horse, bull, and deer; and that it was a very bold and daring animal.

SYNONYM. *Bos Arnee*. *Shaw*.—*Shaw's Gen. Zool. Pl.* 210.

big as an immensely large ox, though it was believed, from its appearance, to have been not more than two years old. When cut up, it was found to weigh three hundred and sixty pounds per quarter, making one thousand four hundred and forty pounds weight of beef in the whole carcass.

On an enquiry made by Dr. Anderson, of gentlemen who had been in India, respecting cattle of large size in that part of the world; some of them mentioned animals of this kind, which they said were kept by the native princes chiefly for parade, under the name of *fighting bullocks*. A convincing proof that these animals are kept by the princes, and probably for parade, is obtained from an Indian painting, in which three of them are very distinctly delineated. This painting represents one of those entertainments that are given by the Indian princes for the amusement of their subjects, similar to the fights that were exhibited for the same purpose on the arena at Rome. An elephant is figured in the act of contending with two tigers; and, among the number of objects assembled, there are three Arnees: these appear to be waiting apart, each under the guidance of a leader, who is seated upon his back, and has hold of a bridle in the animal's mouth. This painting is the property of Gilbert Innes, Esq. of Stow, near Edinburgh.

THE AMERICAN BISON^{*}

In the interior regions of North America immense herds of Bisons are frequently seen. They feed in the

^{*} See Plate ix. Fig. 1.

DESCRIPTION. The American Bison has short rounded horns, pointing outwards. It is covered, in many parts, with long shaggy hair, and has a high protuberance on the shoulders. The fore-parts of the body are excessively thick and strong; and the hinder parts are comparatively very slender.

SYNONYMS. *Bos Americanus.* Linn.—Bison d'Amerique. Buff.—American Bison. *Smellie.*—Buffalo. *Lawson.* *Catesby.*

open savannahs morning and evening; and retire, during the sultry parts of the day, to rest near shady rivulets and streams of water. In the moist land they frequently leave so deep an impression of their feet, as to be traced and shot by the artful Indians. In this undertaking, however, it is necessary that the men should be particularly careful, for, when they are only wounded, the animals become excessively furious. The hunters go against the wind, as the faculty of smell in the Bisons is so exquisite, that the moment they get scent of their enemy they retire with the utmost precipitation. In taking aim the hunter directs his piece to the hollow of the shoulder, by which means he generally brings down the animal at one shot; but if not killed, the Bison immediately runs upon him, and with its horns and hoofs, tears him in pieces, or tramples him to death.

These animals are so amazingly strong, that when they flee through the woods from a pursuer, they frequently brush down trees as thick as a man's arm; and, be the snow ever so deep, such are their strength and agility, that they are able to plunge through it much faster than the swiftest Indian can run in snow-shoes. "To this (says Mr. Hearne) I have many times been an eye-witness. I once had the vanity to think that I could have kept pace with them; but though I was at that time celebrated for running fleetly in snow-shoes, I soon found that I was no match for the Bisons, notwithstanding they were then plunging through such deep snow, that their bellies made a trench as large as if many heavy sacks had been hauled through it."

In Canada the hunting of the Bison is a common employment of the natives. They draw up in a large square, and commence their operations by setting fire to the grass, which, at certain seasons, is very long and dry. As the fire burns onward, they advance, closing

their ranks as they proceed. The animals, alarmed by the light, gallop confusedly about till they are hemmed in so close, that frequently not a single beast is able to escape.

In Louisiana the men mount on horseback, each with a sharp, crescent-pointed spear in his hand. They approach with the wind, and, as soon as the animals smell them, they instantly seek to escape; but the sight of the horses moderates their fear, and the majority of the Bisons are, at a certain time of the year, so fat and unwieldy, as easily to be enticed to slacken their pace. As soon as the men overtake them, they endeavour to strike the crescent just above the ham, in such a manner as to cut through the tendons, and render them afterwards an easy prey.

The hunting of these animals is also common in several parts of South America. It commences with a sort of festivity, and ends in an entertainment, at which one of their carcasses supplies the only ingredient. As soon as a herd of Bisons is seen on the plain, the most fleet and active of the horsemen prepare to attack them, and, descending in the form of a widely-extended crescent, they hunt them in all directions. After a while the animals become so weary, that they seem ready to sink under their fatigue; but the hunters, still urging them to flight by their loud cries, drive them at last from the field. Such as are unable to exert the necessary speed for escape are slaughtered.

The sagacity which the Bisons exhibit in defending themselves against the attacks of wolves is admirable. When they scent the approach of a drove of those ravenous creatures, the herd throws itself into the form of a circle, having the weakest in the middle, and the strongest ranged on the outside, thus presenting an impenetrable front of horns.

"There is (says Mr. Turner, who resided long in America) a singular and affecting trait in the character of this animal when a calf. Whenever a Cow Bison falls by the murdering hand of the hunters, and happens

to have a calf, the helpless young one, far from attempting to escape, stays by its fallen dam, with signs expressive of strong natural affection. The dam thus secured, the hunter makes no attempt on the calf, (knowing that to be unnecessary,) but proceeds to cut up the carcass: then, laying it on his horse, he returns home followed by the calf, which thus instinctively attends the remains of its dam. I have seen a single hunter ride into the town of Cincinnati, between the Miames, followed in this manner by three calves, all of which had just lost their dams by this cruel hunter."

This gentleman is of opinion that the Bison is superior even to our domestic cattle for the purposes of husbandry, and has expressed a wish to see this animal domesticated on the English farms. He informs us that a farmer, on the great Kenhawa, broke a young Bison to the plough; and, having yoked it with a Steer taken from his tame cattle, it performed its work to admiration. But there is another property in which the Bison far surpasses the ox; and this is his strength. "Judging from the extraordinary size of his bones, and the depth and formation of his chest, (continues this gentleman,) I should not think it unreasonable to assign nearly a double portion of strength to this powerful inhabitant of the forest. Reclaim him, and you gain a capital quadruped, both for the draught and for the plough: his activity peculiarly fits him for the latter, in preference to the ox."

The uses of the Bison when dead are various. Powder flasks are made of the horns. The skins form an excellent buff-leather, and, when dressed with the hair on, serve the Indians for clothes and shoes. The Europeans of Louisiana use them for blankets, and find them light, warm, and soft. The flesh is used as food, and the bunch on the shoulders is esteemed a great delicacy. The bulls, when fat, frequently yield each a hundred and fifty pounds weight of tallow, which forms a considerable article of commerce. The hair is spun into gloves, stockings, and garters, that are very

strong, and look as well as those made of the finest sheep's wool. Governor Pownal assures us, that there may be manufactured from it a most luxurious kind of clothing.

Buffaloes are natives of the warmer parts of India and Africa; but they have been introduced into some of the countries of Europe, where they are now perfectly naturalized. In Italy they constitute an essential part both of the riches and food of the poor. They are employed in agriculture; and butter and cheese are made from their milk. These animals are very common in Western Hindostan. They are fond of wallowing in mud, and will swim over the broadest rivers. During inundations, they are frequently observed to dive to the depth of ten or twelve feet, in order to force up with their horns the aquatic plants; and these they eat while swimming.

In many parts of the East, as well as in Italy, Buffaloes are domesticated. It is said to be a singular sight to observe, morning and evening, large herds of them cross the Tigris and Euphrates. They proceed, all wedged against each other, the herdsman riding on one of them, sometimes standing upright, and sometimes

* **DESCRIPTION.** The Buffalo, in its general form, has a great resemblance to the common Ox; but it differs from this animal in its horns, and in some particulars of its internal structure. It is larger than the Ox; the head is also bigger in proportion, the forehead higher, and the muzzle longer. The horns are large, and of a compressed form, with the exterior edge sharp: they are straight for a considerable length from their base, and then bent slightly upward. The general colour of the animal is blackish, except the forehead and the tip of the tail, which are of a dusky white. The hunch is not, as many have supposed it, a large fleshy lump, but it is occasioned by the bones that form the withers being continued to a greater length than in most other animals.

SYNONYMS. *Bos Bubalus.* Linn.—*Buffle.* *Buffon.*

couching down; and, if any of the exterior ones are out of order, he steps lightly from back to back, to drive them along.

A singular circumstance relative to these animals, is recorded by the navigators who completed the voyage to the Pacific Ocean, begun by Captain Cook. When at Pulo Condore they procured eight Buffaloes, which were to be conducted to the ships by ropes put through their nostrils and round their horns; but when these were brought within sight of the ship's people, they became so furious, that some of them tore out the cartilage of their nostrils, and set themselves at liberty; and others broke down the shrubs to which it was found necessary to fasten them. All attempts to get them on board would have proved fruitless, had it not been for some children, whom the animals would suffer to approach them, and by whose puerile management their rage was quickly appeased: and, when the animals were brought to the beach, it was by their assistance, in twisting ropes around their legs, that the men were enabled to throw them down, and by that means get them into the boats. And what appears to have been no less singular than this circumstance was, that they had not been a day on board before they became perfectly gentle.

The skin and horns of the Buffalo are its most valuable parts: the former is very strong and durable, and consequently is well adapted for various purposes in which a strong leather is required. The latter have a fine grain, are strong, and bear a good polish; and are, therefore, much valued by cutlers and other artificers. The flesh is said to be excellent eating; and it is so free from any disagreeable smell or taste, that it nearly resembles beef. The flesh of the Cows, when some time gone with young, is esteemed the finest; and the young Calves are reckoned by the Americans the greatest possible delicacy.

THE CAPE BUFFALO*

The savage disposition, large size, and enormous strength of these animals, render them too well known in all the countries which they inhabit. In the plains of Caffraria they are so common, that it is by no means unusual to see a hundred and fifty, or two hundred of them in a herd. They generally retire to the thickets and woods in the day-time, and at night go out into the plains to graze. Treacherous in the extreme, they frequently conceal themselves among the trees, and there stand lurking till some unfortunate passenger comes by, when they at once rush out into the road, and attack the traveller, who has no chance to escape but by climbing up a tree, if he is fortunate enough to be near one. Flight is of no avail: he is speedily overtaken by the furious beast, who, not contented with throwing him down and killing him, stands over him even for a long time afterwards, trampling him with his hoofs, and crushing him with his knees; and not only mangles and tears the body to pieces with his horns and teeth, but likewise strips off the skin, by licking it with his tongue. Nor does he perform all this at once, but often retires to some distance from the body, and returns with savage ferocity to gratify afresh his cruel disposition.

As Professor Thunburg was travelling in Caffraria, he and his companions had just entered a wood, when they discovered a large old male Buffalo, lying quite

* DESCRIPTION. The fore-parts of this animal are covered with long, coarse, and black hair. The horns are thick, and rugged at the base, sometimes measuring three feet in length, and lying so flat as to cover almost all the top of the head. The ears are large and slouching. The body and limbs are very thick and muscular; and the animal is above eight feet long and six in height. The head hangs down, and bears a most fierce and malevolent aspect.

SYNONYMS. *Bos Cafer*. *Linnaeus*.—Cape Ox. *Penn. Kerr*.—Cape Buffalo. *Sparrman*.—African Buffalo. *Church*.—Buffalo. *Bewick*.—*Bewick's Quad.* p. 47.

alone, in a spot, that for the space of a few square yards, was free from bushes. The animal no sooner observed the guide, who went first, than, with a horrible roar, he rushed upon him. The fellow turned his horse short round behind a large tree, and the Buffalo rushed forward to the next man, and gored his horse so dreadfully in the belly, that it died soon afterwards. These two men climbed into trees, and the furious animal made his way towards the rest, who were approaching, but at some distance. A horse without a rider was in the front; as soon as the Buffalo saw this animal he became more outrageous than before, and attacked him with such fury, that he not only drove his horns into the horse's breast, but even out again through the very saddle. At this moment the Professor happened to come up, but from the narrowness of the path, having no room to turn round, he was glad to abandon his horse, and take refuge in a tree. The Buffalo, however, had finished; for, after the destruction of the second horse, he turned suddenly round, and galloped away.

Some time after this, the Professor and his party espied an extremely large herd of Buffaloes grazing on a plain. Being now sufficiently apprised of the disposition of these animals, and knowing that they would not attack any person in the open plains, they approached within forty paces, and fired amongst them. The whole troop, notwithstanding the individual intrepidity of the animals, surprised by the sudden flash and report, turned about, and made off towards the woods. The wounded Buffaloes separated from the rest of the herd; and among these was an old bull Buffalo, which ran with fury towards the party. They evaded his attack, and the animal galloping close past them, soon afterwards fell. Such, however, had been his strength, that, notwithstanding the ball had entered his chest, and had penetrated nearly through his body, he had run at full speed several hundred paces after he had been wounded.

The Cape Buffalo is frequently hunted, both by Europeans and by the natives of South Africa. In Caffra-ria he is generally killed by means of javelins, which the inhabitants use with considerable dexterity. When a Caffre has discovered the place where several Buffaloes are collected together, he blows a pipe, made of the thigh-bone of a sheep, the sound of which is heard at a great distance. The moment his comrades hear this notice they run to the spot, and, surrounding the animals, which they take care to approach by degrees, lest they should alarm them, throw their javelins at them. This is generally done with so sure an aim, that out of eight or twelve, it rarely happens that a single one escapes. When the chase is ended, each man cuts off and takes away his share of the game.

Some Europeans at the Cape once chased a Buffalo, and having driven him into a narrow place, he turned round, and instantly pushed at one of his pursuers, who had on a red waistcoat. The man, to save his life, ran to the water, plunged in, and swam off: the animal followed him so closely, that the poor fellow had no alternative but that of diving. He dipped over head, and the Buffalo, losing sight of him, swam on towards the opposite shore, three miles distant, and, as was supposed, would have reached it, had he not been shot by a gun from a ship lying at a little distance. The skin was presented to the governor of the Cape, who had it stuffed, and placed it among his collection of curiosities.

Like the hog, this animal is fond of wallowing in the mire. His flesh is lean, but juicy, and of a high flavour. The hide is so thick and tough, that targets, musket-proof, are formed of it; and, even while the animal is alive, it is said to be in many parts impenetrable to a leaden musket-ball: balls hardened with a mixture of tin are, therefore, always used, and even these are often flattened by the resistance. Of the skin the strongest and best thongs for harness are made. The Hottentots, who never put themselves to any great trouble in

dressing their victuals, cut the Buffaloes' flesh into slices, and then smoke, and at the same time half broil it, over a few coals. They also frequently eat it in a state of putrefaction. They dress the hides by stretching them on the ground with stakes, afterwards strewing them over with warm ashes, and then with a knife scraping off the hair.

Belluæ*

OF THE HORSE TRIBE†.

Various and essential are the services performed to mankind, by the animals of this tribe. In many countries, they are almost the only beasts of draught and burden that are employed. They are gregarious, and in a wild state inhabit the most retired deserts. The mode in which they fight is by biting, and by kicking with their hind feet; and they have the singular property of breathing only through the nostrils.

Of the six ascertained species of Horses, only one has yet been discovered on the New Continent, in a perfectly wild state, and this animal has cloven hoofs: it is an inhabitant of the mountains of South America.

* The animals of the Linnean order Belluæ, have obtuse front-teeth; and their feet are armed with hoofs, in some species whole or rounded, and in others obscurely lobed or subdivided.

† The generic characters of the Horse are six parallel front teeth in the upper, and six in the lower jaw, the latter somewhat projecting. There is also one canine-tooth on each side, in both jaws, remote from the rest.

THE COMMON HORSE

The Horse is a native of several districts of Asia and Africa; and in the southern parts of Siberia large herds of these animals are occasionally seen. They are extremely swift, active, and vigilant; and have always a sentinel, who, by a loud neigh, gives notice to the herd of the approach of danger, on which they gallop off with astonishing rapidity.

In Ukraine, where wild Horses are often found, they are rendered no otherwise serviceable to man than as food. The wild Horses on each side of the Don, are the offspring of the Russian Horses that were employed at the siege of Asoph in the year 1697, when, for want of forage, they were turned loose. They have relapsed into a state of nature, and have become as shy and timid as the original savage breed. The Cossacks chase them, but always in the winter, by driving them into the valleys filled with snow, into which they plunge and are caught. Their excessive swiftness is such, as entirely to exclude every other mode of capture.

The Horses of South America are of Spanish origin, and entirely of the Andalusian breed. They are now become so numerous as to live in herds, some of which are said to consist of ten thousand. As soon as they perceive domestic Horses in the fields, they gallop up to them, caress, and, by a kind of grave and prolonged neighing, invite them to run off. These are soon seduced, unite themselves to the independent herd, and depart along with them; and it not unfrequently happens that travellers are stopped on the road by the effect of this desertion.

The horse, in an improved state, is found in almost every part of the globe, except, perhaps, within the

* **SYNONYMS.** *Equus caballus.* *Linn.*—Cheval. *Buffon.*—Wild Horse. *Bell.*—*Bingley's Mem. of Brit. Quad. Plates, No. 42, Var. 1, 2, 3, and 4.*

Arctic Circle; and its reduction and conquest may be considered as the greatest acquisition from the animal world, that the art and industry of man have ever made. As domestics, their docility and gentleness are unparalleled, and they contribute more to the convenience and the pride of man than all other animals put together.

In Arabia they are found in their highest perfection, as little degenerated in their race or powers as the lion or tiger. To the Arabs they are as dear as their own children; and the constant intercourse, arising from living in the same tent with their owner and his family, creates a familiarity that could not otherwise be effected, and a tractability that arises only from the kindest usage. They are the fleetest animals of the desert, and are so well trained as to stop in their most rapid course by the slightest check of the rider. Unaccustomed to the spur, the least touch with the foot sets them again in motion; and so obedient are they to the rider's will, as to be directed in their course merely by the motion of a switch. They form the principal riches of many of the Arab tribes, who use them both in the chase and in their plundering expeditions. In the day-time they are generally kept saddled at the door of the tent, prepared for any excursion their master may take. They never carry heavy burdens, nor are employed on long journeys. Their constant food, except in spring, when they get a little grass, is barley; and this they are suffered to eat only during the night. The Arab, his wife, and children, always lie in the same apartment with the mare and foal, who, instead of injuring, suffer the children to rest on their bodies and necks, without in the least incommoding them: the gentle animals even seem afraid to move, lest they should hurt them. The Arabs never beat nor correct their horses, but always treat them with the utmost kindness.

The whole stock of a poor Arabian of the desert consisted of a Mare; this the French consul at Saïd offered to purchase, with an intention to send her to

Louis the Fourteenth. The Arab, pressed by want, hesitated a long time, but at length consented, on condition of receiving a considerable sum of money, which he named. The consul wrote to France for permission to close the bargain, and having obtained it, sent immediately to the Arab the information. The man, so poor as to possess only a miserable rag, as a covering for his body, arrived with his magnificent courser. He dismounted, and, looking first at the gold and then steadfastly at his Mare, heaved a deep sigh:—"To whom is it (he exclaimed) that I am going to yield thee up? To Europeans! who will tie thee close, who will beat thee, who will render thee miserable! Return with me, my beauty! my jewel! and rejoice the hearts of my children!" As he pronounced the last words, he sprang upon her back, and was out of sight almost in a moment. What an amiable and affecting sensibility in a man, who, in the midst of distress, could prefer all the disasters attendant on poverty, rather than surrender the animal that he had long fostered in his tent, and had been the child of his bosom, to what he supposed inevitable misery! The temptation even of riches, and a relief from poverty, had not sufficient allurements to induce him to so cruel an act.

"The Horses of the Bedouin Arabs, whose lives (says Sonnini) are spent in traversing the scorching sands, are able, notwithstanding the fervency of the sun, and the suffocating heat of the soil over which they pass, to travel for three days without drinking, and are contented with a few handful of dried beans, given once in twenty-four hours. From the hardness of their labour and diet, they are, of course, very lean; yet they preserve incomparable vigour and courage."

The description of the Eastern Horses in the Book of Job, is exceedingly poetical and expressive:—"Hast thou given the Horse strength? Hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? The glory of his nostrils is terri-

ble. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men: He mocketh at fear, and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear, and the shield. He swalloweth the ground with fierceness and rage; neither believeth he that it is the sound of the trumpet. He saith among the trumpets, ha, ha; and he smelleth the battle afar off, the thunder of the captains, and the shouting."

In Norway, where most of the roads are impassable for carriages, the Horses are remarkably sure-footed; they skip along over the stones, and are always full of spirit. Pontoppidan says, when they go up and down a steep cliff, on stones like steps, they first gently tread with one foot, to try if the stone be firm; and in this they must be left entirely to their own management, or the best rider in the world would run the risk of breaking his neck. When they have to descend steep and slippery places, and such frequently occur, they, in a surprising manner, like the asses of the Alps, draw their hind legs together under their bodies, and thus slide down. They exhibit much courage when they contend, as they are often under the necessity of doing, with wolves and bears, but particularly with the latter. When the Horse perceives any of these animals near him, and has a Mare or Foal with him, he first puts these behind out of the way, and then furiously attacks his enemy with his fore legs, which he uses so expertly as generally to prove victorious. Sometimes, however, the bear, which has twice the strength of his adversary, gets the advantage, particularly if the Horse make any attempt, by turning round, to strike him with his hind legs; for the bear then instantly closes upon him, and keeps such firm hold as scarcely to be shaken off: the Horse in this case gallops away with his enemy, till he falls down and expires from loss of blood.

There are few countries that can boast a breed of Horses so excellent as our own. The English hunters

are allowed to be among the noblest, most elegant, and useful animals in the world. Whilst the French, and many other European nations, seem attentive only to spirit and parade, we train ours principally for strength and dispatch. Theirs, however, have the advantage of never coming down before, as ours do, because, in breaking, they put them more on their haunches, while we, perhaps, throw them too much forward. With unwearied attention, however, to the breed, and repeated trials of all the best Horses in different parts of the world, ours are now become capable of performing what no others can. Among our racers we have had one (Childers) which has been known to pass over eighty-two feet and a half in a second of time, a degree of fleetness perhaps unequalled by any other Horse. In the year 1745, the post-master of Stretton rode, on different Horses, along the road to and from London, no less than 215 miles in eleven hours and a half, a rate of above eighteen miles an hour: and in July, 1788, a Horse belonging to a gentleman of Billiter-square, London, was trotted, for a wager, thirty miles in an hour and twenty-five minutes, which is at the rate of more than twenty-one miles in an hour. In London there have been instances of a single Horse drawing, for a short space, the weight of three tons: and some of the pack-horses of the north usually carry burdens that weigh upwards of four hundred pounds. But the most remarkable proof of the strength of the British Horses is in our mill Horses, some of which have been known to carry, at one load, thirteen measures of corn, that in the whole would amount to more than nine hundred pounds in weight.

Though endowed with vast strength, and with great powers of body, such is the disposition of the Horse, that it rarely exerts either to its master's prejudice: on the contrary, it will endure fatigue, even to death, for our benefit. Providence seems to have implanted in him a benevolent disposition, and a fear of the human race, with, at the same time, a certain consciousness of

the services we can render him. One instance, however, has been mentioned, of recollection of injury, and of an attempt to revenge it. A baronet, one of whose hunters had never tired in the longest chase, once encouraged the cruel thought of attempting completely to fatigue him. After a long chase, therefore, he dined, and again mounting, rode him furiously among the hills. When brought to the stable, the strength of the animal appeared exhausted, and he was scarcely able to walk. The groom, possessed of more feeling than his brutal master, could not refrain from tears at the sight of so noble an animal thus sunk down. The baronet some time afterwards entered the stable, and the Horse made a furious spring upon him, and had not the groom interfered, would soon have put it out of his power of ever again misusing animals.

The barbarous practice of docking the tails, and cutting the ears of Horses, is in this country very prevalent. The former, principally with waggon Horses, under the pretence that a bushy tail collects the dirt of the roads; and the latter, from the notion that they are rendered more elegant in their appearance. Thus, from ideal necessity, we deprive them of two parts of the body that are principally instrumental, not only to their own ease and comfort, but to their utility to us. By taking away their ears, the funnels are destroyed which they direct towards the place from which any sound is heard, and they are thus rendered nearly deaf. And in the loss of their tail, they find even a still greater inconvenience. During summer they are perpetually teased with swarms of insects, that either attempt to suck their blood, or to deposit their eggs in the rectum: these they have now no means of lashing off; and in winter they are deprived of a necessary protection against the cold.

But, of all others, the custom that we have adopted, (for it is found in no other nation than this,) of nicking them, is the most useless and absurd. It is a heart-rending sight to go into the stable of a horse-

dealer, and there behold a range of fine and beautiful steeds, with their tails cut and slashed, tied up by pulleys to give them force, suffering such torture that they sometimes never recover the savage gashes they received. And for what is all this done?—that they may hold their tails somewhat higher than they otherwise would, and be for ever afterwards deprived of the power of moving the joints of them as a defence against flies!

I have another abuse to notice, observable in those who shoe Horses. The blacksmith, in order to save himself a little trouble, will frequently apply the shoe red-hot to the Horse's foot, in order that it may burn for itself a bed in the hoof. "The utmost severity (says Lord Pembroke) ought to be inflicted on all those who clap shoes on hot. This unpardonable laziness of farriers, in making feet thus to fit shoes, instead of shoes to fit the feet, dries up the hoofs, and utterly destroys them." It is of the most ruinous consequence: it hardens and cracks the hoofs, and induces even the most fatal disorders.

The natural diseases of Horses are few, but our ill-usage, or neglect, or, which is very frequent, our over-care of them, brings on a numerous train, which are often fatal. They sleep but little, and this, in general, on their legs. If properly treated, these animals will live from forty to fifty years.

THE ASS*.

Wild Asses live in herds, each consisting of a chief, and several mares and colts, sometimes to the number of twenty. They are excessively timid, and provident against danger. A male takes on him the care of the herd, and is always on the watch. If they observe a

* SYNONYMS. *Equus Asinus.* Linn.—Asne. Buffon.—Wild Ass, or Koulan. Pennant.—Onagar of the Ancients. Bingley's *Memoirs of Brit. Quad. Pl.* 43.

hunter, who by creeping along the ground has got near them, the sentinel takes a great circuit, and goes round and round him, as if discovering somewhat to be apprehended. As soon as the animal is satisfied, he rejoins the herd, which sets off with great precipitation. Sometimes his curiosity costs him his life; for he approaches so near as to give the hunter an opportunity of shooting him. The senses of hearing and smelling in these animals are most exquisite; so that they are not in general to be approached without the utmost difficulty. "The wild asses did stand in the high places," says the prophet Jeremiah; "they snuffed up the wind like dragons." The Persians catch these animals, and break them for the draught. They make pits, which they fill about half up with plants: into these the Asses fall without bruising themselves, and are taken thence alive. When completely domesticated they are very valuable, and sell at a high price, being at all times celebrated for their amazing swiftness.

The saltiest plants of the deserts, such as the atriplex, kali, and chenopodium, and also the bitter milky tribes of herbs, constitute the food of the wild Asses. These animals also prefer salt water to fresh. This is exactly conformable to the history given of this animal in the book of Job; for the words "barren land," expressive of his dwelling, ought to be rendered *salt places*. The hunters generally lie in wait for the Asses near the ponds of brackish water, to which they resort to drink.

These animals are found wild in the mountainous deserts of Tartary, the southern districts of India and Persia, and in some parts of Africa. In their native state they exhibit an appearance far superior, both in point of vivacity and beauty, to the animals of the same species in a state of domestication.

The Ass, like the horse, was imported into America by the Spaniards: and that country seems to be peculiarly favourable to this race of animals; for, where they have run wild, they have multiplied in such numbers, that in some places they have become quite a nuisance.

In the kingdom of Quito, the owners of the grounds where they are bred suffer all persons to take away as many as they choose, on paying a small acknowledgment, in proportion to the number of days the sport of hunting them lasts. They catch them in the following manner:—A number of persons go on horseback, and are attended by Indians on foot. When arrived at the proper places, they form a circle in order to drive the Asses into some valley, where, at full speed, they throw the noose, and endeavour to halter them. The creatures, finding themselves enclosed, make furious efforts to escape; and, if only one forces his way through, they all follow with irresistible impetuosity. However, when noosed, the hunters throw them down, and secure them with fetters, and thus leave them till the chase is over. Then, in order to bring them away with greater facility, they pair them with tame Asses; but this is not easily performed, for they are so fierce that they often wound the persons who undertake to manage them.

They have all the swiftness of horses, and neither declivities nor precipices can retard their career. When attacked, they defend themselves by their heels and mouth with such address, that, without slackening their pace, they often maim their pursuers. But the most remarkable property in these creatures is, that, after carrying their first load, their celerity leaves them, their dangerous ferocity is lost, and they soon contract the stupid look and the dullness peculiar to their species. It is also observable that these creatures will not permit a horse to live among them. They always feed together; and, if a horse happen to stray into the place where they graze, they fall upon him, and, without even giving him the choice of flying, bite and kick him till they leave him dead on the spot.

The manner in which the Asses descend the precipices of the Alps or the Andes is truly extraordinary. In the passes of these mountains there are often on one side lofty eminences, and on the other frightful abysses; and, as these generally follow the direction of the moun-

tain, the road, instead of lying on a level, forms, at every little distance, steep declivities of several hundred yards downward. Places of this description can only be descended by Asses; and the animals themselves, by the caution that they use, seem to be sensible of the danger to which they are exposed. When they come to the edge of one of the descents, they stop of themselves, without being checked by the rider; and, if he inadvertently attempt to spur them on, they continue immovable. They seem all this time ruminating on the danger that lies before them, and preparing themselves for the encounter. They not only attentively view the road, but tremble at the danger. Having prepared for their descent, they place their fore feet in a posture as if they were stopping themselves; they then also put their hinder feet together, but a little forward, as if they were about to lie down. In this attitude, having taken a survey of the road, they slide down with the swiftness of a meteor. All that the rider has to do is to keep himself fast on the saddle, without checking the rein; for the least motion is sufficient to disorder the equilibrium of the Ass, in which case both must unavoidably perish. But their address in this rapid descent is truly wonderful; for, in their swiftest motion, when they seem to have lost all government of themselves, they follow exactly the different windings of the road, as if they had previously settled in their minds the route they were to follow, and had taken every possible precaution for their safety. In this journey the natives, who are placed along the sides of the mountains, and hold themselves by the roots of the trees, animate the beasts with shouts, and encourage them to perseverance. Some Asses, after being long used to these journeys, acquire a kind of reputation for their safety and skill; and their value rises in proportion to their fame.

In Spain the breed of Asses has, by care and attention, become the finest in the world; they are large, strong, elegant, and stately animals, and are often found

to rise to fifteen hands high. The best of them are sometimes sold for a hundred guineas or upwards each. This shows that the Ass, notwithstanding all our prejudices, and our generally contemptuous opinion of it, may be rendered even an elegant, as well as a useful animal. The Romans had a breed which they held in such high estimation, that Pliny mentions one of the stallions selling for a price greater than three thousand pounds of our money; and he says that in Celtiberia, a province of Spain, a she Ass had colts that were bought for nearly the same sum.

Being more hardy than horses, these animals are preferred to them for journeys across the deserts. Most of the Musselman pilgrims use them in the long and laborious journeys to Mecca; and the chiefs of the Nubian caravans, which are sixty days in passing immense solitudes, ride upon Asses; and these, on their arrival in Egypt, do not appear fatigued. When the rider alights, he has no occasion to fasten his Ass; he merely pulls the rein of the bridle tight, and passes it over a ring on the fore-part of the saddle; this confines the animal's head, and is sufficient to make him remain patiently in his place.

In the principal streets of Cairo, Asses stand ready bridled and saddled for hire, and answer the same purposes as hackney-coaches in London. The person who lets them accompanies his Ass, running behind to goad him on, and to cry out to those on foot to make way. The animals are regularly rubbed down and washed, which renders their coat smooth, soft, and glossy. Their food is similar to that of the horses, and usually consists of chopped straw, barley, and beans. They here seem, says M. Denon, to enjoy the plenitude of their existence: they are healthy, active, cheerful, and the mildest and safest animals that a person can possibly have. Their natural pace is a canter or gallop; and, without fatiguing his rider, the Ass will carry him rapidly over the large plains which lie between different parts of this straggling city.

The gentleness, patience, and perseverance of this animal, so much abused and neglected in our own country, are without example. He is subjected to excessive labour, and contented with the coarsest herbage. The common lanes and high roads are his nightly residence, and his food is the thistle or plantain, which he sometimes prefers to grass. In his drinking he is, however, singularly nice, refusing all but the water of the clearest brooks. He is much afraid of wetting his feet, and will, even when loaded, turn aside to avoid the dirty parts of the road. His countenance is mild and modest, fully expressive of his simple and unaffected deportment. His services are too often repaid by hard fare and cruel usage; and, being generally the property of the poor, he partakes of their wants and their distresses. He is more healthy than the horse; and, though generally degraded into the most useless and neglected of domestic quadrupeds, he might, by care and education, be rendered useful for a variety of domestic purposes in which the horse is now employed. Were we but to pay a little attention to him, we could not fail to be gainers by it. We ought also to cross our breed with the Arabian, Egyptian, or even the Spanish males; which would produce us an offspring improved both in strength and appearance. The fame of Asses being stubborn animals is, in a great measure, unfounded; as it arises solely from ill usage, and not from any natural defect in their constitution or temper.

An old man, who some years ago sold vegetables in London, used in his employment an Ass, which conveyed his baskets from door to door. Frequently he gave the poor industrious creature a handful of hay, or some pieces of bread, or greens, by way of refreshment and reward. The old man had no need of any goad for the animal, and seldom indeed had he to lift up his hand to drive it on. This kind treatment was one day remarked to him, and he was asked whether his beast was apt to be stubborn. "Ah! Master, (he replied) it is of no use to be cruel; and as for stubbornness, I cannot com-

plain, for he is ready to do any thing, or to go any where. I bred him myself. He is sometimes skittish and playful, and once ran away from me: you will hardly believe it, but there were more than fifty people after him, attempting in vain to stop him; yet he turned back of himself, and never stopped till he ran his head kindly into my bosom."

There are said to have been no Asses in England in the reign of queen Elizabeth. How soon afterwards they were introduced is uncertain; they are, however, at present naturalized in the country, and their utility becomes every day more experienced.

The skin of the Ass is elastic, and of use for various articles, such as drums, shoes, and the leaves of pocket-books. *Shagreen* is made of that part of the skin which grows about the rump; and at Astracan and throughout Persia there are great manufactories of it. It is not naturally granulated, that roughness being altogether effected by art. The flesh of the wild Ass is eaten by the Tartars, and is said to be a very delicate and palatable food. The milk is universally known, and is an approved specific in many disorders. It is light, easy of digestion, and highly nutritious.

THE ZEBRA *.

Zebras inhabit the scorching plains of Africa, vast herds of them affording sometimes an agreeable relief to the eye of the wearied traveller. They assemble in the day-time on the extensive plains of the interior

* See Plate iii. Fig. 3.

DESCRIPTION. The Zebra, somewhat like the mule, has a large head and ears. Its body is round and plump, and its legs are delicately small. The skin is as smooth as satin, and adorned with elegant stripes like ribbons, which in the male are brown on a yellowish white ground, and in the female black on a white ground.

SYNONYMS. *Equus Zebra.* *Linnaeus.*—Zebre. *Buffon.*—*Shaw's Gen. Zool.* ii. tab. 217.—*Bew. Quad.* p. 22.

of the country, and by their beauty and liveliness, adorn and animate the dreary scene.

All attempts to tame this animal, so as to render it serviceable to mankind, have hitherto been fruitless. Wild and independent by nature, it seems ill adapted to servitude and restraint. If, however, it were taken young, and much care were bestowed on its education, it might, probably, be in a great measure domesticated.

Several Zebras have at different times been brought into England. In the year 1814 there was one in the Tower, which was deposited there in the month of June, 1803. It had been brought from the Cape of Good Hope by lieutenant-general Dundas; and was afterwards purchased by Mr. Bullock, the master-keeper of the animals in the Tower. This animal, which was a female, was more docile than the generality of Zebras that have been brought into Europe; and when in good humour, she was tolerably obedient to the commands of her keeper, the servant of the general, who attended her during the voyage. This man would spring on her back, and she would carry him a hundred and fifty, or two hundred yards; but by the time she had done this, she always became restive, and he was obliged to dismount. Sometimes, when irritated, she plunged at the keeper, and attempted to kick him. She one day seized him by the coat with her mouth, and threw him upon the ground; and, had not the man been extremely active in rising and getting out of her reach, would certainly have destroyed him. He at times had the utmost difficulty to manage her; from the irritability of her disposition; the great extent, in almost every direction, to which she could kick with her feet; and the propensity she had of seizing whatever offended her, in her mouth. Strangers she would by no means allow to approach her, unless the keeper had hold of her head; and even then there was great risk of a blow from her hind feet.

The beautiful male Zebra that was burnt some years

ago at the Lyceum, near Exeter 'Change, was so gentle, that the keeper has often put young children upon its back, and without any attempt from the animal to injure them. In one instance a person rode it from the Lyceum to Pimlico. But this unusual docility in an animal naturally vicious, is to be accounted for from its having been bred and reared in Portugal, from parents that were themselves half reclaimed. A Zebra that was kept at Kew, was of a ferocious and savage nature. No one dared to approach it, except the person who was accustomed to feed it, and who alone could mount upon its back. Mr. Edwards saw this animal eat a large paper of tobacco, paper and all; and was told it would eat flesh, and any kind of food that was given to it. This, however, might proceed from habit or necessity in its long voyage; for in a native state these animals all feed, like horses and asses, on vegetables.

The voice of the Zebra can scarcely be described. It is thought by some persons to have a distant resemblance to the sound of a post-horn. It is more frequently exerted when the animals are alone, than at other times.

In some parts about the Cape of Good Hope there are many Zebras; and a penalty of fifty rix-dollars is inflicted on any person who shoots one of them. Whenever any of these animals happen to be caught alive, there is a general order that they must be sent to the governor.

OF THE HIPPOPOTAMUS TRIBE.

Only one species of Hippopotamus has hitherto been discovered. This has four front teeth in each jaw; the upper ones stand distant by pairs, the lower ones are prominent, and the two middle ones the longest. The canine teeth are solitary; those of the lower jaw extremely large, curved, and cut obliquely at the ends. The feet are each armed at the margin with four hoofs.

THE AMPHIBIOUS HIPPOPOTAMUS *

From the unwieldiness of his body, and the shortness of his legs, the Hippopotamus, according to the account given by M. de Buffon, is not able to move fast upon land, and is then an extremely timid animal. If pursued he takes to the water, plunges in, sinks to the bottom, and there walks at ease. He cannot, however, continue long without rising to the air for the purpose of breathing; though, if threatened with danger, he does this so cautiously, that the place where his nose is raised above the surface of the water is scarcely perceptible.

If wounded, the Hippopotamus will rise and attack boats or canoes with great fury, and he will often sink them by biting large pieces out of their sides. In shallow rivers, he makes deep holes in the bottom, in order to conceal his great bulk. When he quits the water, he usually puts out half his body at once, and smells and looks round; but he sometimes rushes out with great impetuosity, and tramples down every thing in his way. During the night he leaves the rivers, in order to feed on sugar-canes, rushes, millet, or rice, of which he consumes great quantities.

* See Plate ix. Fig. 2.

DESCRIPTION. In size the full-grown Hippopotamus is equal, or even sometimes superior, to the Rhinoceros. One that M. Le Vaillant killed in the south of Africa measured ten feet seven inches in length, and about nine feet in circumference. Its form is uncouth, the body being extremely large, fat, and round; the legs are very short and thick; the head is large; the mouth extremely wide; and the teeth of vast strength and size. The eyes and ears are small. The tail is short, and sparingly scattered with hair. The whole animal is covered with short hair, thinly set, and is of a brownish colour. The hide is in some parts two inches thick, and not much unlike that of the hog.

SYNONYMS. Hippopotamus Amphibius. *Linn.*—Hippopotami, River Horses, Water Elephants, or Ker-kamanon. *Barbot.*—Hipopopotame, ou Cheval Marin. *Buffon.*—*Shaw's Gen. Zool.* ii. tab. 219.—*Bew. Quad.* p. 182.

The Egyptians are said to adopt a singular mode of destroying this voracious animal. They mark the places that he chiefly frequents, and there deposit a quantity of peas. When the beast comes ashore, hungry and voracious, he eagerly devours the peas, which occasion an insupportable thirst. He then rushes into the water, and drinks so copiously, that the peas in his stomach being fully saturated, swell so much as soon afterwards to kill him. Among the Caffres in the South of Africa, the Hippopotamus is sometimes caught by means of pits, made in the paths that lead to his haunts. But the gait of this animal, when undisturbed, is generally so slow and cautious, that he often smells out the snare, and avoids it. The most certain method is to watch him at night, behind a bush close to his path, and, as he passes, to wound him in the tendons of the knee-joint, by which he is immediately rendered lame, and unable to escape from the numerous hunters that afterwards assail him.

These creatures are capable of being tamed. Belon says, he has seen one so gentle, as to be let loose out of a stable, and led by its keeper, without attempting to injure any person.

“The Hippopotamus is not (says Dr Sparman) so slow and heavy in his pace on land, as M de Buffon describes him to be; for both the Hottentots and colonists consider it dangerous to meet a Hippopotamus out of the water indeed, an instance had recently occurred, of one of these animals having for several hours pursued a Hottentot, who found it difficult to make his escape.”

Professor Thunburg was informed, by a respectable person at the Cape, that as he and a party were on a hunting expedition, they observed a female Hippopotamus come out from one of the rivers, and retire to a little distance from its bank, in order to calve. They lay concealed in the bushes till the calf and its mother made their appearance, when one of them fired, and shot the latter dead. The Hottentots, who imagined

that after this they could seize the calf alive, immediately ran from their hiding-place; but though it had only just been brought into the world, the young animal got out of their hands, and made the best of its way to the river, where, plunging in, it got safely off. This is a singular instance of pure instinct, for, the Professor observes, the creature unhesitatingly ran to the river, as its proper place of security, without having previously received any instructions from the actions of its parent to do so.

The flesh of the Hippopotamus is in great request among the Hottentots, who are very fond of it, either roasted or boiled. Their partiality might not, however, induce a European to suppose it excellent, for they considerably exceed our epicures in their relish for high-flavoured game. Thunburg passed a Hottentot tent, which had been pitched for the purpose of consuming the body of an Hippopotamus, that had been killed some time before: the inhabitants were in the midst of such stench, that the travellers could hardly pass them without being suffocated.

The skin of the Hippopotamus is cut into thongs for whips, which, for softness and pliability, are preferred by the Africans to those made of the hide of the rhinoceros; and the tusks, from their always preserving their original whiteness and purity, are reckoned superior to ivory. The French dentists manufacture them into artificial teeth.

These animals inhabit the rivers of Africa, from the Niger to Berg River, many miles north of the Cape of Good Hope. They formerly abounded in the rivers nearer the Cape, but they are now almost extirpated there.

OF THE TAPIR TRIBE.

Of this, as of the preceding tribe, there is only one known species; and, as the former is a native only of the Old, this is an inhabitant, exclusively, of the New

Continent. There are front-teeth in each jaw; and single incurvated canine-teeth. There are also five broad grinders on each side, both above and below. On the hind feet there are three hoofs, and on the fore feet four.

THE LONG-NOSED TAPIR*.

In its general habits this animal has a considerable resemblance to the hippopotamus; yet, in many particulars, it reminds us also of the elephant and of the rhinoceros. It is the largest of all the South American quadrupeds except the horse; and its skin is so thick and hard, as to be almost impenetrable by a bullet. Although its natural disposition is marked only by actions indicative of mildness and timidity, endeavouring, when attacked, to save itself by flight, or by plunging into the water; yet, if its retreat be cut off, it has courage and strength to make a most powerful resistance, both against men and dogs.

The Tapir feeds chiefly by night, and subsists upon sugar-canes, grasses, the leaves of shrubs, and various kinds of fruit. In feeding it uses its long projecting nose or proboscis, in the same manner as the rhinoceros applies his upper lip, to grasp its food and convey it to its mouth. This is an instrument of great flexibility and

* See *Plate x. Fig. 6.*

DESCRIPTION. The Tapir is about the size of a small cow. The nose of the male is elongated into a kind of proboscis, capable of being contracted and extended at pleasure. The ears are roundish and erect; and the tail is short and naked. The neck is thick, short, and has a kind of bristly mane, about an inch and half long near the head. The body is thick and clumsy, and the back somewhat arched. The legs are short and thick; and the feet have small black hoofs. The hair is of a dusky or brownish colour.

SYNONYMS. Tapir Americanus. *Linnaeus*.—Le Tapir. *Buffon*.—Long-nosed Tapir. *Pennant*.—American Tapir. *Shaw*.—*Shaw's Gen. Zool.* ii. Pl. 220.—*Brew. Quad.* p. 174.

strength; and in it, as in the proboscis of the elephant, are situated the organs of smell.

Notwithstanding its general clumsy appearance, the Tapir is an extremely active animal in the water, where it swims and dives with singular facility. Like the hippopotamus, it is able to continue immersed for a considerable while; but it is also under the necessity of occasionally rising to the surface in order to breathe. During the day-time this animal generally sleeps in some retired part of the woods. It chiefly resides in dry places, near the sides of hills; and occasionally frequents the savannahs in quest of food. On land its motions appear to be slow, and its disposition inactive. Its voice is a kind of whistle, which the hunters easily imitate, and by this means frequently lure it to its destruction. The usual attitude which the Tapir adopts, when at rest, is sitting on its rump in the manner of a dog.

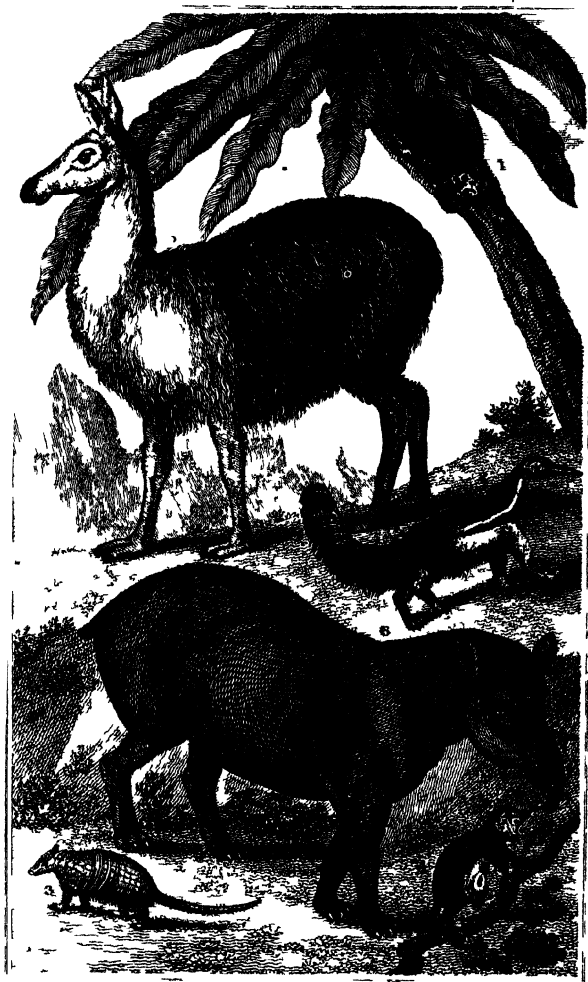
Except at one season of the year, the male lives entirely apart from the female. To the latter belongs the whole management of rearing their offspring. This she leads to the water, and she seems to delight in teaching it to swim, frequently plunging about and playing with it, in that element, for a considerable while together. On land it runs after her wherever she goes.

If they are caught young, these animals may, without difficulty, be tamed, and rendered even in some measure domestic. They are very common in the town of Cayenne, where they are suffered to run about the streets, and are fed with cassava-bread and fruit. M. Bajou, a surgeon attached to the government, had, at this place, a Tapir which became perfectly familiar, and acquired a strong attachment to him, distinguishing him in the midst of many other persons, licking his hands, and following him like a dog. This animal would often go alone into the woods to a great distance, but always returned to his home early in the evening. M. Bajou assures us, that a Tapir, which had been suffered to run tame about the streets of Cayenne, became so unma-

nageable in a vessel, on board of which it was put in order to be conveyed to France, that it was found impossible to confine it. It broke the very strong cords with which it was tied, and, throwing itself overboard, escaped to shore. Every one supposed it to have been lost, but, in the evening, it returned to the town. On reimbarcking it, great precautions were taken to prevent its escape; but these did not succeed, for during the voyage, a storm happening to arise, it became again outrageous, broke its fetters, and, rushing out of its place of confinement, committed itself to the waves, and was never afterwards seen.

In the year 1704, a Tapir was exhibited alive at Amsterdam, under the name of *Sea Horse*. Another, which, about the same time, was in the menagerie of the prince of Orange, was so young as scarcely to be larger than a hog. Its proboscis, when at rest, did not much extend below the under lip; and, in this state, had numerous circular wrinkles, but was capable of considerable extension. It had no finger at the extremity, like the proboscis of an elephant, notwithstanding which, the animal, by means of it, could pick up from the ground the smallest objects. This creature was very gentle, and approached with familiarity any one who entered its lodge. A female Tapir was exhibited at several of the fairs in Holland and Germany. The keepers usually fed it on rye-bread, a kind of gruel, and on vegetables of different kinds. It was excessively fond of apples, and was able to smell them to a considerable distance. If any person happened to have apples in his pockets, it would eagerly approach, and thrusting in its proboscis, would take them out with surprising facility. It ate of almost every thing that could be presented to it, whether vegetables, fish, or meat. Its favourite attitude was sitting on its rump, like a dog; and it never exerted its voice unless it was either fatigued or irritated.

In the year 1812, there was, at Exeter 'Change, a young Tapir, which was not bigger than a large hog.



1. Guanaco. 2. Jaguar. 3. Armadillo.

It had been brought into England about seven months before, with another of the same species, which died not long after its arrival. In every respect it appeared to be a mild and docile beast.

These animals inhabit the eastern parts of South America; and occur in great numbers, from the Isthmus of Darien, to the river Amazon. Their flesh is considered by the South Americans as a wholesome food; and the skin serves all the purposes for which a strong leather would be required. The Indians make shields of it, which are stated to be so hard, as to be impenetrable by an arrow.

OF THE HOG TRIBE IN GENERAL*.

The manners of these animals are in general filthy and disgusting. They are fond of wallowing in the mire, and feed almost indifferently on animal and vegetable food, devouring even the most corrupted carcasses. With their strong and tendinous snout they dig the earth, in search of roots and other aliments hidden beneath the surface. They are exceedingly prolific.

THE COMMON HOG†.

In Europe Wild Boars inhabit the depths of forests, where, in vegetables and fallen fruits, they are supplied with an abundance of food. From these forests they

* In the upper jaw there are four front teeth, the points of which converge; and, usually, six in the lower jaw, which project. The canine teeth, or tusks, are two in each jaw; those above short, while those below are long, and extend out of the mouth. The snout is prominent, moveable, and has the appearance of having been cut off, or truncated. The feet are cloven.

† See *Platc* vi. *Fig.* 4.

SYNONYMS. *Sus Scrofa*. *Linnaeus*.—Sanglier et Marcassin. *Buffon*.—Wild Hog. *Browne*. *Shaw's Gen. Zool.* ii. *tab.* 221, 222.—*Bew. Quad.* p. 160.—*Bingley's Mem. of Brit. Quad.* Pl. 44.

never issue but for the purpose of changing their residence, or of plundering and devastating the adjacent fields. In Egypt, on the contrary, the Wild Boar has no shelter. Continually exposed to the fervor of a burning sun, he traverses the sandy plains, where the few scattered shrubs which are there found, yield him but little subsistence, and still less shade.

While they are young, these animals live in herds, for the purpose of mutual defence; but the moment they come to maturity, they walk the forest alone and fearless. They seldom attack unprovoked; but they dread no enemy, and shun none. When hunted, they do not so much flee from their assailants, as keep them at bay, and are at last rather wearied out, or overcome by numbers, than fairly killed in the chase.

The Domestic Hog is, generally speaking, a harmless and inoffensive beast. He lives chiefly on vegetables, though, when pressed by hunger, he will devour even the most putrid carcasses. We, however, generally conceive him much more indelicate than he really is. He selects, at least, the plants of his choice, with great sagacity and niceness; and is never, like some other animals, poisoned by mistaking noxious for wholesome food. Selfish, indocile, and rapacious, as many think him, no animal has greater sympathy for those of his own kind than the Hog. The moment one of these animals gives the signal of distress, all within hearing rush to its assistance. They have been known to gather round a dog that teased them, and kill him on the spot. Enclose a male and female in a sty, when young, and the female will decline from the instant her companion is removed, and will probably die of a broken heart. This animal is well adapted to the mode of life to which it is destined. Having to obtain a subsistence principally by turning up the earth with its nose, we find that the neck is strong and brawny; the eyes are small, and placed high in the head; the snout is long; the nose callous and tough, and the power of smelling peculiarly acute. The external form is indeed very unwieldy, but,

by the strength of its tendons, the Wild Boar is enabled to fly from the hunters with surprising agility. The back toe on the feet of this animal prevents its slipping while it descends steep declivities.

In Minorca the Hog is converted into a beast of draught; a Cow, a Sow, and two young Horses, have been seen in that island yoked together, and of the four the Sow drew the best. The ass and the Hog are there common helpmates, and are frequently yoked together to plough the land. In some parts of Italy, Swine are employed in hunting for truffles, which grow some inches deep in the ground. A cord being tied round the hind leg of one of the animals, the beast is driven into the pastures, and we are told that wherever he stops and begins to root with his nose, truffles are always to be found.

In proof that these animals are not destitute of sagacity, it would perhaps be unnecessary to recite any other accounts than those of the various "*learned pigs*," which have at different times been exhibited in this country. But an instance more surprising than these was afforded by Toomer, the gamekeeper of the late Sir H. P. St. John Mildmay, actually breaking in a black New Forest Sow to find game, back and stand, nearly as well as a pointer. This sow, when very young, took a great partiality to some pointer puppies that Toomer, then under-keeper of Broomy Lodge, in the New Forest, was breaking. It played and often came to feed with them. From this circumstance it occurred to Toomer, to use his own expression, "that, having broken many a dog as obstinate as a pig, he would try if he could also succeed in breaking a pig." The little animal would often go out with the puppies to some distance from home; and Toomer would entice it further by a sort of pudding made of barley-meal, which he carried in one of his pockets. The other he filled with stones, which he threw at the Pig whenever she misbehaved, as he was not able to catch and correct her, in the same manner as he did his dogs. He informed Sir

Henry Mildmay, who communicated to me this account, that he found the animal very tractable, and that he soon taught her what he wished, by this mode of reward and punishment. Sir Henry Mildmay informed me that he had frequently seen her out with Toomer, when she quartered her ground, stood when she came on game, having an excellent nose, and backed other dogs as well as he ever saw a pointer. When she came on the cold scent of game, she slackened her trot, and gradually dropped her ears and tail till she was certain, and she then fell down on her knees. So staunch was this animal, that she would frequently remain five minutes and upwards on her point. As soon as the game rose, she always returned to Toomer, grunting very loudly for her reward of pudding, if it was not immediately given to her. When Toomer died, his widow sent the Pig to Sir Henry Mildmay, who kept it for three years, but never used it except for the purpose of amusing his friends. In doing this, a fowl was put into a cabbagenet, and hidden among the fern in some part of the park, and the extraordinary animal never failed to point it, in the manner above described. Sir Henry was, at length, obliged to part with this Sow, from a circumstance as singular as the other occurrences of her life. A great number of lambs had been lost, nearly as soon as they were dropped, and a person having been sent to watch the flock, the animal was detected in the very act of devouring a lamb. This carnivorous propensity was ascribed to her having been accustomed to feed with the dogs, and to partake of the flesh on which they were fed. Sir Henry sent her back to Mrs. Toomer, who sold her to Mr. Sykes, of Brookwood in the New Forest, where she died the usual death of a pig, and was converted into bacon*.

The senses of taste and smelling are enjoyed by these animals in great perfection. Wind appears to have

* This account is inserted *verbatim* from the "Memoirs of British Quadrupeds."

great influence on them; for when it blows violently they seem much agitated, and run towards their sty, sometimes screaming in the most violent manner. Naturalists have also remarked that, on the approach of bad weather, they will bring straw to the sty, as if to guard against the effects of wind. The country people have a singular adage, that "Pigs can see wind."

That Swine are extremely tenacious of life is known to almost every person who is acquainted with their manners. The most curious instance that I have met with of this, in any writer, is in Josselyn's account of two voyages to New England. I shall insert the passage, though I by no means intend to vouch for its truth. "Being at a friend's house in Cambridgeshire, the cook-maid making ready to slaughter a Pig, she put the hinder parts between her legs, as the usual manner is, and taking the snout in her left hand, with a long knife stuck the Pig, and cut the small end of the heart almost in two, letting it bleed as long as any blood came forth; then throwing it into a kettle of boiling water, the Pig swam twice round about the kettle; when taking it out to the dresser, she rubbed it with powdered rosin, and stripped off the hair, and as she was cutting off the hinder petty-toc, the Pig lifted up his head with open mouth, as if it would have bitten. Well, the belly was cut up, the entrails drawn out, and the heart laid upon the board, which, notwithstanding the wound it received, had motion in it above four hours after. There were several of the family by, with myself, and we could not otherwise conclude but that the Pig was bewitched."

The female goes four months with young, and has very numerous litters, sometimes as many as twenty at a time. These animals live to a considerable age, even to twenty-five or thirty years.

In the island of Sumatra there is a variety of this species, that frequents the impenetrable bushes and

marshes of the sea-coast. These animals live on crabs and roots: they associate in herds, are of a gray colour, and smaller than the English swine. At certain periods of the year they swim in herds, consisting of sometimes a thousand, from one side of the river Siak to the other, at its mouth, which is three or four miles broad, and again return at stated times. This kind of passage also takes place in the small islands, by their swimming from one to the other. On these occasions they are hunted by a tribe of the Malays, who live on the coasts of the kingdom of Siak, and are called Salettians.

These men are said to smell the swine long before they see them, and when they do this they immediately prepare their boats. They then send out their dogs, which are trained for this kind of hunting, along the strand, where, by their barking, they prevent the swine from coming ashore and concealing themselves among the bushes. During the passage the Boars precede, and are followed by the females and the young, all in regular rows, each resting its snout on the rump of the preceding one. Swimming thus in close rows, they form a singular appearance.

The Salettians, men and women, meet them in their small, flat boats. The former row, and throw large mats, made of the long leaves of the *Pandanus odoratissima*, interwoven through each other, before the leader of each row of swine, which still continue to swim with great strength, but, soon pushing their feet into the mats, they get so entangled as to be able either no longer to move, or only to move very slowly. The rest are, however, neither alarmed nor disconcerted, but keep close to each other, none of them leaving the position in which they were placed. The men then row towards them in a lateral direction; and the women, armed with long javelins, stab as many of the swine as they can reach. For those beyond their reach, they are furnished with smaller spears, about six feet in length, which they dart to the distance of thirty or

forty feet with a sure aim. As it is impossible for them to throw mats before all the rows, the rest of these animals swim off in regular order, to the places for which they set out, and for this time escape the danger. As the dead swine are found floating round in great numbers, they are picked up and put into larger boats, which follow for the purpose.

Some of these swine the Salettians sell to the Chinese traders who visit the island; and of the rest they preserve in general only the skins and fat. The latter, after being melted, they sell to the Maki Chinese; and it is used by the common people instead of butter, as long as it is not rancid, and also for burning in lamps, instead of cocoa-nut oil.

THE ETHIOPIAN HOG *.

These creatures inhabit the wildest, most uncultivated, and hottest parts of Africa, from Senegal to Congo; and they are also found on the island of Madagascar. The natives carefully avoid their retreats, since, from their fierce and savage nature, they often rush upon them unawares, and gore them with their tusks. They reside principally in subterraneous recesses, which they dig by means of their nose and hoofs. If attacked and pursued, they rush on their adversary with astonishing force, striking, like the common boar, with their tusks, which are capable of inflicting the most tremendous wounds.

* **DESCRIPTION.** This animal, in its general appearance, is much allied to the Common Hog; but is distinguished from it by a pair of large semicircular lobes or wattles, situated beneath the eyes. The snout also is much broader, and very strong and callous.

SYNONYMS. *Sus Æthiopicus.* Linn.—Emgalo, or Engulo. Barbot.—African Wild Boar. Martyn.—Ethiopian Hog. Penn.—Wood Swine. Sparrman.—Sanglier d'Afrique. Buffon.—Shaw's Gen. Zool. ii. tab. 223.—Bew. Quad. p. 149.

A Boar of this species was sent, in 1765, by the governor of the Cape of Good Hope to the prince of Orange. From confinement and attention he became mild and gentle, except when offended; in which case even those persons to whose care he was entrusted, were afraid of him. In general, however, when the door of his cage was opened, he came out in perfect good-humour, gaily frisked about in search of food, and greedily devoured whatever was given him. He was one day left alone in the court-yard for a few minutes, and on the return of the keeper was found busily digging into the earth, where, notwithstanding the cemented bricks of the pavement, he had made an amazingly large hole, with a view, as was afterwards discovered, of reaching a common sewer that passed at a considerable depth below. It was not without much trouble, and the assistance of several men, that his labour could be interrupted. They at length, however, forced him into his cage; but he expressed great resentment, and uttered a sharp and mournful noise.

His motions were altogether much more agile and neat than those of the common Hog. He would allow himself to be stroked, and even seemed delighted with rough friction. When provoked, or rudely pushed, he always retired backward, keeping his face toward the assailant, and shaking his head or forcibly striking with it. When, after long confinement, he was set at liberty for a little while, he was very gay, and leaped about in an entertaining manner. On these occasions, he would, with his tail erect, sometimes pursue the fallow-deer and other animals.

His food was principally grain and roots; and of the former he preferred barley and wheat. He was so fond of rye-bread, that he would run after any person who had a piece of it in his hand. In the acts of eating and drinking he always supported himself on the knees of his fore feet; and would often rest in this position. His eyes were so situated as to prevent his seeing around him, being interrupted by the wattles and

prominences of his face; but, in compensation for this defect, his senses of smelling and hearing were wonderfully acute.

Dr. Sparrman, when he was in Africa, pursued several Pigs with the old Sows, with the intention of shooting one of them; but though he failed in this object, their chase afforded him singular pleasure. The heads of the females, which had before appeared of a tolerable size, seemed on a sudden to have grown larger and more shapeless than they were. This momentary and wonderful change astonished him so much the more, as, riding hard over a country full of bushes and pits, he had been prevented from giving sufficient attention to the manner in which it was brought about. The whole of the mystery, however, consisted in this: each of the old ones, during its flight, had taken a Pig in its mouth; a circumstance that also explained to him another subject of his surprise, which was, that all the Pigs which he had just before been chasing along with the old ones, had vanished on a sudden. But in this action we find a kind of unanimity among these animals, in which they resemble the tame species, and which they have in a greater degree than many others. It is likewise very astonishing, that the Pigs should be carried about in this manner between such large tusks as those of their mother, without being hurt, or crying out in the least. Dr. Sparrman was twice afterwards witness to a similar occurrence.

The flesh of the Ethiopian Hog is well-flavoured, and not unlike that of the German wild boar.

Cetaceous Animals*.

OF THE NARWAL TRIBE†.

The Narwals are distinguishable, at first sight, from all other Cetaceous Animals. They are known by the long, hard, spiral, and sharp-pointed weapons which project from the anterior part of their upper jaw. They obtained the name of *Narh-wal*, or whale which feeds on dead bodies, from their having been believed to subsist on such dead and putrid animals as they found floating on the water.

THE UNICORN NARWAL, OR SEA UNICORN‡.

Such are the size and bulk, and so powerful are the muscles of these animals, that they are able, in their

* The animals of the Linnean order Cete have spiracles or breathing holes on the fore part of the skull. They have no feet: their pectoral fins are without nails; and the tail is horizontal. For a more particular account of the Cetaceous animals, see vol. i. p. 17.

† See Plate xi. Fig. 2.

The Narwals have one or two very long weapons projecting from the front of their upper jaw. There are no teeth in the lower jaw. The orifices of the spiracles are united, and situated on the highest part of the head.

‡ DESCRIPTION. This animal measures from twenty to thirty feet in length, exclusive of the weapon in front of its head, which is from five to eight feet long. In some individuals there are two weapons. The head is small in proportion to the size of the body; and the fins on the breast are also small. There is no dorsal fin. The skin is white, variegated with numerous black spots on the upper parts of the body.

SYNONYMS. *Monodon Monoceros. Linnaeus.*—Le Narwal vulgaire. *La Cepede. Shaw's Gen. Zool. Pl. 225.*

own element, to move, in all directions, with astonishing velocity. The weapon which projects, sometimes to the length of six or eight feet, from their upper jaw, is one of the most formidable that can well be imagined. When urged with all their force, it will penetrate even into the solid timbers of a ship; and the body of no animal whatever is sufficiently hard to resist its effects. This weapon is not a horn, but is a species of tusk, in its substance not greatly dissimilar to the tusks of the elephant. As ivory, it is, however, much more valuable than these, from the circumstance of its being harder, and capable of receiving a much higher polish.

The detached weapons of Narwals are deposited, in many cabinets, as the horns of that generally esteemed fabulous quadruped, the unicorn. They have occasionally been found broken short off, and deeply buried in the keels and bottoms of vessels; and even in the bodies of some of the largest species of whales, which either accident or design, may have led the Narwals to plunge against.

These animals do not appear to have any organs of voice. It is stated that, in their general disposition and manners they are sufficiently mild and peaceable; and that they are formidable only when compelled to defend themselves from the attack of their enemies. Their principal food consists of small fish, and marine animals of various kinds, such as the actiniae and cuttle-fish: the horny mandibles or jaws of the latter have sometimes been found in their stomachs, in immense quantity. They usually swim in troops; and are found in most parts of the Northern Ocean. The Greenlanders pursue and kill them on account of their oil. This they employ in domestic uses: they also use the flesh for food, and the teeth as articles of traffic. The blubber of the Narwal is from two to three inches and a half in thickness, encompasses the whole body, and is sometimes more than half a ton in weight. This affords a large proportion of fine oil.

The females produce each a single young-one at a

birth; and this they nourish for several months with milk, supplied from teats that are situated near the origin of their tail.

An individual of this species, twenty-five feet in length, was stranded near Friestone, in Boston Deep, Lincolnshire, in the month of February, 1800; and another, about eighteen feet in length, was cast ashore and taken alive, not far from Boston, a few years before. In the Northern seas, when the Narwal is harpooned, it dives in the same manner, and with almost the same velocity as the Great Whale, but not to the same depth. It generally descends about two hundred fathoms, then returns to the surface, and is dispatched with a lance in a few minutes.

OF THE WHALE TRIBE*.

Whales are objects of eager pursuit by the inhabitants of various nations, on account, principally, of the oil or blubber which their bodies yield in enormous quantity; and of the *whalebone*, the laminæ or blades of which supply, in these animals, the place of teeth, in catching and securing their food†.

There are about six ascertained species of Whales, inhabitants chiefly of the icy regions surrounding the North Pole. They prey upon various kinds of fish, particularly upon herrings, among the shoals of which they commit great devastation. They also feed on shell-fish, and the medusæ or sea-blubber. The females generally produce but one young-one at a birth.

The Whales have no teeth in either jaw; but, in place of these, the upper jaw is furnished with the horny laminæ called *whalebone*. On the top of the head there is a tubular opening or spiracle, with a double external orifice. The skin is in general black, or brown; very thick, and without any hair.

† For a particular account of the whalebone, see vol. i. p. 18.

THE GREAT WHALE*.

The size and bulk of these animals are generally enormous; and their muscular powers are so great, that a blow of their horizontal tail, is at any time sufficient to upset a boat; and, when struck upon the surface of the ocean, it makes the water fly, with tremendous noise, in all directions. They are able to eject water from the spiracles on their heads, to a great height.

Nature's strange work, vast Whales of different form,
Toss up the troubled floods, and are themselves a storm;
Uncouth the sight, when they, in dreadful play,
Discharge their nostrils, and refund a sea;
Or angry lash the foam with hideous sound,
And scatter all the watery dust around.
Fearless the fierce destructive monsters roll,
Ingulf the fish, and drive the flying shoal.
In deepest seas these living isles appear,
And deepest seas can scarce their pressure bear:
Their bulk would more than fill the shelvy strait,
And fathom'd depths would yield beneath their weight.

This animal employs the tail alone to advance itself in the water; and the force and celerity with which so enormous a body cuts its way through the ocean, are truly astonishing. A track is frequently made in the water like what would be left by a large ship; this is

* DESCRIPTION. This is believed to be the largest of all living creatures. It usually measures from fifty to eighty feet in length. The head, which constitutes nearly a third of the whole bulk, is flattish above. The mouth is exceedingly large, stretching almost as far back as the eyes. The tongue is very soft, being composed almost entirely of fat; and it adheres, by its under surface, to the lower jaw. The gullet scarcely exceeds four inches in width. The eyes, which are not larger than those of an ox, are placed at a great distance from each other, on the sides of the head, in the most convenient situation possible for the animals' seeing around them. The skin is about an inch thick, and the outer or scarf-skin about the

called his wake, and by this the animal is often followed. The fins are only applied in turning, and giving a direction to the velocity impressed by the tail. The usual rate at which Whales swim, seldom, however, exceeds four miles an hour. When alarmed, their extreme velocity is eight or nine miles an hour, but this seldom continues more than a few minutes at a time. These animals sometimes ascend to the surface with so much velocity as to leap entirely out of the water. Sometimes they throw themselves into a perpendicular posture, with their heads downward; and, rearing their tails on high in the air, they beat the water with awful violence. In both these cases, the sea is thrown into a foam, and the air filled with vapours. Sometimes the Whale shakes its tremendous tail in the air, and makes with it a cracking noise, which is heard at the distance of two or three miles.

When a Whale retires from the surface of the water into the deep, it first lifts its head, then, plunging beneath the waves, elevates its back, like the segment of a sphere, deliberately rounds it away towards the extremity, throws its tail out of the water, and then disappears.

These Whales are shy and timid animals, furnished with no weapons either of offence or defence, except their tail. As soon as they perceive the approach of a boat, they generally plunge under water, and sink into the deep; but when they find themselves in danger they exhibit their great and surprising strength. In this case they break to pieces whatever comes in their

thickness of parchment, and very smooth. Under the skin lies the blubber, which is from eight to twelve inches thick: this, when the animal is in health, is of a beautiful yellow colour. The tail is broad and semilunar.

SYNONYMS. *Balæna mysticetus.* *Linnaeus.*—*La Baleine Franche.* *La Cepede.*—*Wallfish.* *Mart.* *Spitzb.*—*Common Whale.* *Penn.*—*Great Mysticete.* *Shaw.*—*Shaw's Gen. Zool.* ii. tab. 226.

way; and if they run foul of a boat, they dash it to atoms.

Whales have no voice; but, in breathing, or blowing through their spiracles, they make a very loud noise. The water which they discharge, is ejected to the height of several yards, and at a distance appears like a puff of smoke. When these animals are undisturbed, they usually remain on the surface of the water about two minutes at a time, during which they breathe eight or nine times, and then descend for an interval of five or ten minutes; or, when feeding, fifteen or twenty. The depth to which they usually descend is not very great; but, when struck with a harpoon, they sometimes draw out from the boats, in a perpendicular descent, as much line as would measure an English mile.

When the Whale feeds, it swims with considerable velocity below the surface of the sea, with its jaws widely extended. A stream of water consequently enters its capacious mouth, and, along with it, immense quantities of cuttle-fish, sea-blubber, shrimps, and other small marine animals. The water escapes at the sides; but the food is entangled, and, as it were, sifted by the whalebone within the mouth.

From their naturally inoffensive disposition these animals have many foes; but the enemy they have most reason to dread is the sword-fish. This animal is sufficiently active to evade the blows which its tremendous adversary makes with his tail, one of which, if it took place, must effectually destroy it. The sea, for a considerable space around, may be seen dyed with the blood, that issues in copious streams, from the wounds made in the Whale's body by the dreadful beak of his adversary. The noise made at each blow of the tail, is said to be louder than that of a cannon. The fishermen, in calm weather, frequently lie on their oars as spectators of the combat, till they perceive the Whale at his last gasp; they then row towards him, and, the enemy retiring at their approach, they enjoy the fruits of his victory.

The fidelity of the male and female to each other, exceeds that of most animals. Some fishermen, as Anderson, in his History of Greenland, informs us, having struck one of two Whales, a male and female, that were in company together, the wounded animal made a long and terrible resistance; with a single blow of its tail it upset a boat containing three men, by which all went to the bottom. The other still attended its companion, and lent it every assistance, till, at last, the animal that was struck sank under the number of its wounds, while its faithful associate, disdaining to survive the loss, stretched itself upon the dead Whale, and shared its fate.

To the Greenlanders, as well as to the natives of southern climates, the Whale is an animal of essential importance; and these people spend much time in fishing for it. When they set out on their Whale-catching expeditions, they dress themselves in their best apparel, fancying, that if they are not cleanly and neatly clad, the Whale, which detests a slovenly and dirty garb, would immediately avoid them. In this manner about fifty persons, men and women, set out together in one of their large boats. The women carry along with them their needles and other implements, to mend their husbands' clothes, in case they should be torn, and to repair the boat, if it happen to receive any damage. When the men discover a Whale, they strike it with their harpoons, to which are fastened lines or straps two or three fathoms long, made of seal-skin, having at the end a bag of a whole seal-skin, blown up. The huge animal, by means of the inflated bag, is in some degree compelled to keep near the surface of the water. When he is fatigued and rises, the men attack him with their spears till he is killed. They now put on their *spring jackets*, (made, all in one piece, of a dressed seal's skin,) with their boots, gloves, and caps, which are laced so tightly to each other, that no water can penetrate them. In this garb they plunge into the sea, and begin to slice off the fat all round the animal's

body, even from those parts that are under water; for, their jackets being full of air, the men do not sink, and they have means of keeping themselves upright in the sea. They have sometimes been known so daring as, while the Whale was still alive, to mount on his back and kill him from thence.

The period of gestation in the female is supposed to be nine or ten months, and she generally produces but one at a birth. When she suckles it she throws herself on one side, on the surface of the water, and in this position the young-one attaches itself to the teat. She is extremely careful of her offspring, carrying it with her wherever she goes; and, when hardest pursued, supporting it between her fins. Even when wounded she is said still to clasp it; and, if she plunge to avoid danger, she takes it with her to the bottom: but in this case she always rises sooner than she otherwise would, for the purpose of giving it breath. The young-ones continue with the dams for nearly twelve months: during this time they are called by the sailors *Short-heads*. They are then extremely fat, and will yield each above fifty barrels of blubber. At two years old they have the name of *Stunts*, from not thriving much immediately after quitting the breast: at this age they will scarcely yield more than twenty barrels of blubber. From the age of two years they are denominated *Skull-fish*.

The flesh of the Whale is very dry and insipid, except about the tail, which is more juicy, but still very tasteless. The horny laminæ in the upper jaw, called *whalebone*, are very valuable as an article of commerce: but these animals are principally pursued for their oil or blubber.

The seas that are principally inhabited by the Great Whales, are those in about the seventieth degree of north latitude, near Spitzbergen and Greenland. These animals are likewise found in the seas of the high southern latitudes, and are said sometimes to visit the shores even of countries near the torrid zone. They

have been observed in the Mediterranean, and occasionally in the neighbourhood of the British coasts. Willoughby speaks of one that was stranded near Tynmouth in Northumberland. In the year 1652, a Great Whale, eighty feet in length, was cast ashore in the Frith of Forth; and, about thirty years afterwards, another, somewhat more than seventy feet in length, near Peterhead, in Scotland.

The Whale-Fishery.

In a commercial view the animals of the Whale tribe are of great importance to mankind; supplying us with those two valuable articles, oil and whalebone, and likewise with spermaceti. They are chiefly taken in the northern seas.

The English send out with every ship six or seven boats: each of these has one harpooner, one man at the rudder, one to manage the line, and four seamen as rowers. In each boat there are also two or three harpoons; several lances; and six lines, each a hundred and twenty fathoms long, fastened together.

As soon as a Whale is struck with the harpoon, he darts down into the deep, carrying off the instrument in his body; and so extremely rapid is his motion, that, if the line were to entangle, it would either snap like a thread, or upset the boat. One man, therefore, is stationed to attend only to the line, that it may go regularly out; and another is employed in continually wetting the place it runs against, that the wood may not take fire from the friction.

When the Whale returns to breathe, the harpooner inflicts a fresh wound; till at length the immense animal faints from loss of blood: the men now venture to row the boat quite up to him; and a long steeled lance is thrust into his breast, and through the intestines, which soon puts an end to his existence.

The carcass no sooner begins to float, than holes are cut in the fins and tail; and ropes being fastened to

these, it is towed to the ship, where it is fastened in such a manner that the back floats in the water.

The operation next to be performed, is that of taking out the blubber and whalebone. Several men get upon the animal with a sort of iron spurs, (to prevent them from slipping,) and separate the tail, which is hoisted on deck: they then cut out square pieces of blubber, weighing two or three thousand pounds each, which are also hoisted up. These are here cut into smaller pieces, which are thrown into the hold, and left for three or four days to drain. When all the blubber is cut from the belly of the Whale, it is turned on one side, by means of a piece of blubber left in the middle, called the cant, or turning-piece. The men then cut out this side in large pieces, as before; and also the whalebone, with the gums, which are preserved entire, and hoisted on deck, where the blades are cut and separated, and left till the men have time to scrape and clean them. The Whale is next turned with its back upward, and the blubber is cut from the back and crown bone. The men conclude the whole process by cutting the blubber from the other side. But previously to letting the remainder of the body float away, they cut out the two large upper jaw-bones; which being hoisted on deck, are cleansed and fastened to the shrouds, and tubs are placed under them to receive the oil which they discharge. This oil is a perquisite belonging to the captain.

In three or four days the seamen hoist the pieces of blubber out of the hold, chop them, and put them, by small pieces, into casks, through the bung-holes.

A Whale, the longest blade of whose mouth measures nine or ten feet, will yield about thirty butts of blubber; but some of the largest yield upwards of seventy. One of the latter is generally worth about 1000*l.* sterling: and a full ship, of three hundred tons burden, will produce more than five thousand pounds from one voyage.

Premiums on every whale that is taken are given

to all the persons engaged, from the captain, even to the men who row the boats. These rewards tend to excite their activity in the service of their employers.

To give the reader some idea of the produce of the Whale-fishery, I shall make choice of the season of the year 1697, as perhaps the most fortunate that ever was known. In this year there were a hundred and eighty-nine vessels of different nations; of which a hundred and twenty-one were Dutch, forty-seven from Hamburg, two Swedish, four Danish, twelve from Bremen, two from Embden, and one from Lubec; which caught, in all, one thousand nine hundred and sixty-eight fish. The following was the number of puncheons of blubber produced :

By the Dutch captures	41,344
——— Hamburgers	16,414
——— Swedes	540
——— Danes	1,710
——— Bremeners	3,790
——— Embdeners	68
Total.....	<u>63,866</u>

Estimating the whalebone at about two thousand pounds weight for every Whale, there must have been in the whole nearly 4,000,000 pounds weight of this substance.

Mr. Anderson, in his Natural History of Iceland and Greenland, observes, from an account of the Dutch Whale-fishery for forty-six years, ending in 1721, that, in this time, that nation had employed five thousand eight hundred and eighty-six ships, and caught thirty-two thousand nine hundred and seven Whales; which, valued on an average at five hundred pounds each, give an amount for the whole value, of above sixteen millions sterling, gained out of the sea, mostly by the labour of the people; deducting the expense of the

wear and tear of shipping, the casks, and the provisions.

In 1788 there were 253 British vessels employed in the Northern Whale-fishery. The year 1814 was an unusually prosperous one. Seventy-six British ships procured 1437 Whales, besides seals; the produce of which, in oil only, was 12,132 tons, and the gross value of the freights was estimated at about £.700,000. In the five years, ending with 1818, nearly 70,000 tons of oil, and 3,500 tons of whalebone, were imported into England and Scotland. The principal British ports that are concerned in the Whale-fishery, are those of London, Hull, Aberdeen, and Leith.

The fishing season begins in May, and continues through the months of June and July: but whether the ships have had good or bad success, they must come away and get clear of the ice by the end of August; so that in the month of September at furthest they may be expected home. The more fortunate ships, however, often return in June or July.

OF THE CACHALOT TRIBE.*

The interior organization of the Cachalots, is somewhat different from that of the whales, and requires a nourishment more substantial than that of small fish and marine mollusca. The Cachalots consequently attack and devour several of the larger kinds of fish, and occasionally even porpoisses, dolphins, and young whales, which they are enabled to seize and tear in pieces by means of their teeth. They are not con-

* The upper jaw is broad, and entirely destitute of teeth, or has teeth so short, as to be nearly concealed in the gum. The under jaw is narrow, and furnished with large, conical teeth, which fit into sockets in the upper jaw. The spiracles, or breathing holes, have only a single external orifice. The bodies of these animals are entirely naked, and their skin is very smooth and soft.

tented, like the whales, with merely exerting their strength in self-defence; but will themselves provoke a combat with the larger inhabitants of the element in which they reside, and will attack and destroy them with the utmost vigour and address. Their ferocity and their muscular powers are such, that all the species are considered by the fishermen to be extremely dangerous. It is said that some of them, when they are attacked, will throw themselves on their back, and in that position will defend themselves with their mouth.

These animals inhabit chiefly the Northern Ocean, and nearly the same latitudes as the whales. They frequently swim in troops. Their muscular powers are very great; and notwithstanding their immense and blunt heads, they are able to cut their way through the water with astonishing rapidity.

THE BLUNT-HEADED CACHALOT, OR SPERMACETI
WHALE *.

The velocity with which these Cachalots dart through the water is greater, and their progressive motion is performed by much more elevated bounds or curves, than those of many of the whales. They generally swim in troops, consisting of a great number of both males and females. In the month of March, 1784, there were thirty-two Spermaceti Whales cast on shore,

* DESCRIPTION. The length of the Blunt-headed Cachalot, when full grown, is about seventy feet, and its girth about fifty. When viewed from above, it appears like an immense animated mass, truncated in front, so that the muzzle terminates in a somewhat squared, and almost perpendicular extremity. The head constitutes nearly one third of the whole body: the mouth is situated at the under part, and the under jaw is so small, in comparison with the upper, as to have somewhat the appearance of the lid or cover of an enormous box turned upside down. The eyes are situated above the corners of the mouth, and are so minute, as to be scarcely perceptible. The pectoral fins are each about three feet in length. On the posterior part of the back there is a longitudinal and callous

during a violent gale of wind, in the neighbourhood of Audierne, in France. Their bellowing was heard to the distance of more than a league. Two men, who happened to be walking along the coast not far from the place where the animals were stranded, not conceiving what they could possibly be, were thrown into the utmost agitation and alarm at their noise, and at seeing them floundering in the shallow water, and beating about the sand and mud in all directions, at the same time occasionally throwing water from their spiracles to an immense height, and with tremendous noise. They were all young animals, but the smallest of the whole measured upwards of thirty feet, and the largest nearly fifty feet in length. They were not able to regain the sea; but they continued alive on the sand for upwards of twenty-four hours.

Few animals are more voracious than these, nor can we be surprised at their voracity, when we consider their enormous bulk, and the immense quantity of nourishment which they must of necessity require. They feed on various kinds of fish which swim in shoals, nor do they seem to refuse any marine animals that come in their way. They swallow myriads of the different kinds of mollusca, particularly cuttle-fish, the beaks or jaws of which are often found in their stomachs and intestines; and they pursue and attack dolphins, porpoises, and even several species of sharks. We are informed by Fabricius, that the tremendous white shark, so much dreaded by the other inhabitants of the ocean, flees with precipitation from the Blunt-headed Cachalot: that, in the excess of its alarm, it will

protuberance, or spurious fin. The tail is very short and slender, each of the lobes being hollowed somewhat like the blade of a scythe. The skin is smooth, oily, and almost as soft to the touch as silk. Its colour is usually black.

SYNONYMS. *Physeter macrocephalus*. Linn.—Le Cachalot macrocéphale. *La Cépède*.—Blunt-headed Cachalot. *Pennant*.—Spermaceti Whale, or Parmacity Whale, by the English seamen.—*Shaw's Gen. Zool. Pl.* 228.

often dart to the bottom of the ocean, and endeavour to conceal itself, in the sand or mud, from the piercing sight of its adversary: that it will sometimes incautiously throw itself against the rocks, with such force as to occasion its almost immediate death: and that, notwithstanding its usual voracity, this shark will not dare to approach even the dead body of the Cachalot.

There is, in the upper part of the skull of the Cachalots, an immense cavity, perfectly distinct from the cavity which contains the brain. This occupies nearly one-fourth part of the whole head, extending from the front almost to the eyes, and being sometimes as much as sixteen or eighteen feet in length. It is divided horizontally into two parts by a strong membrane; and each of these parts is again subdivided, by vertical membranes, into numerous cells, which communicate with each other, and which contain a peculiar kind of fat, denominated (though very improperly) *spermaceti*. This, which has frequently been mistaken for the brain, is sometimes found in such quantity, that eighteen or twenty butts of it have been taken from the head of the largest Cachalots. The spermaceti, when the animals are alive, is fluid; but when cold it is of a whitish colour, and is found in somewhat solid lumps.

The oil produced from this Cachalot is not by any means in such quantity as that produced from some of the whales; but, in quality, it is far preferable, since it yields a bright flame, without at the same time exhaling any nauseous smell. The flesh is of a pale red colour, appearing not much unlike coarse pork, and it is said to be very palatable as food.

The substance known by the name of ambergris, is produced from the body of this animal. It is generally found in the stomach, but sometimes in the intestines; and, in a commercial view, is an highly valuable production. As we see it in the shops, it is an opaque substance, which varies in solidity according to its exposure to a warm or cold atmosphere.

Although this animal is most frequently met with

in the Northern Ocean, in the latitudes of Greenland, Spitzbergen, and Iceland, yet it is occasionally seen off the British coasts, and sometimes even in the Mediterranean Sea.

OF THE DOLPHINS IN GENERAL*.

These animals inhabit various seas, being occasionally found both in hot and cold climates. They are much smaller than the whales; the largest species seldom exceeding twenty or five-and-twenty feet in length. They are often seen in shoals, of from five or six to twenty and upwards in number, gambolling about the ocean. Their food consists almost wholly of fish, and principally of mackrel and herrings.

THE COMMON DOLPHIN†.

Dolphins are occasionally observed in almost every part of the ocean; among the ice-bays round the polar circles, in the climates of the temperate zones, and under the vertical sun of the equatorial seas.

They are predatory animals, and pursue, with avidity, various species of fish, but particularly cod, herrings, and

* The Dolphins have a row of large teeth in each jaw; and the spiracles have only a single external orifice, which is situated near the top of the head.

† DESCRIPTION. The body of the Dolphin is oblong and roundish, and the snout narrow and sharp-pointed, with a broad transverse band, or projection of skin, on its upper part. This is a longer and more slender animal than the porpoise; it measures nine or ten feet in length, and about two feet in diameter. The body is black above and white below. The mouth is very wide, reaching almost to the thorax, and contains forty teeth; twenty-one in the upper, and nineteen in the under jaw: when the mouth is shut, the teeth lock into each other.

SYNONYMS. *Delphinus Delphis*. Linn.—Le Dauphin vulgaire. *La Cepede*.—True Dolphin. Kerr.—Delphin. Anderson.—Shaw's Gen. Zool. ii. tab. 229.

flat-fish. In some countries they are known to follow the shoals of mullets, sometimes even into the nets of the fishermen. Their motions in the water are performed with such wonderful rapidity, that the French sailors frequently call the Dolphin *la flèche de la mer*, or "the sea-arrow;" and Rondelet says, that persons who tormented themselves to do what was considered impossible, were often proverbially compared to those who would hold a Dolphin by the tail. M. de Saint Pierre, in his voyage to the Isle of France, assures us that he saw a Dolphin swim, with apparent ease, round the vessel in which he was sailing, though it was going at the rate of six miles an hour. A shoal of these animals followed the ships of Sir Richard Hawkins upwards of a thousand leagues. They were known to be the same, by the wounds they occasionally received from the sailors. Dolphins are greedy of almost any kind of scraps that are thrown overboard; and consequently are often to be caught by means of large iron hooks, baited with pieces of fish or garbage. They are fond of swimming round casks or logs of wood, which they find driving in the sea. They generally swim in troops, and their progressive motion in the water somewhat resembles the undulating motion of a ship under sail. Their evolutions and gambols on the surface of the ocean, sometimes afford a most interesting and entertaining spectacle. By curving their body, and suddenly extending it, like salmon and some other kinds of fish, they are enabled to leap to a very considerable height above the surface of the water. When they are in eager pursuit of prey, and sometimes even in their gambols, these leaps have been repeated with such astonishing celerity, that it is scarcely possible to conceive how, in such short intervals, the necessary force could be impressed. They have been known, on these occasions, to spring forward to a distance of more than twenty feet at a single bound.

The Dolphin was in great repute among the ancients, and both philosophers and historians seem to

have contended who should relate the greatest absurdities respecting this animal. It was consecrated to the gods, was celebrated for its love of the human race, and was honoured with the title of the Sacred Fish. In all cases of shipwreck the Dolphin was believed to be in waiting, to rescue and carry on shore the unfortunate mariners. Arion, the musician, when thrown overboard by the pirates, is said to have been indebted for his life to one of these animals.

How these absurd tales originated, it is impossible even to conjecture; for Dolphins certainly exhibit no marks of peculiar attachment to mankind. If they attend on vessels navigating the ocean, it is in expectation of plunder, and not of rendering assistance in cases of distress. By the seamen of the present day they are held rather in abhorrence than esteem; for their frolics on the surface of the water are almost the sure signs of an approaching gale.

The flesh of these animals was formerly held in great esteem; it is, however, very dry and insipid: the best parts are those near the head.

THE PORPESSE*.

This animal has a great resemblance to the dolphin, both in its general external appearance, and in its habits of life. It has the same qualities, and even the same

* See Plate xi. Fig. 3.

DESCRIPTION. The Porpesse is well known in all the European seas. In its general form it very much resembles the dolphin; it is, however, somewhat less in size, and has a snout both much broader and shorter. It is generally from six to seven feet in length; thick in the fore parts, and gradually tapering towards the tail. The colour is either a blueish black, or a very dark brown above, and nearly white beneath.

SYNONYMS. *Delphinus Phocæna. Linnæus.*—Le Marsouin. *La Cépède.*—Porpoise. *Kerr.*—Porpesse. *Penn.*—Sea-hog, Porpesse-pig, by the English seamen. The name of Porpesse is said to be derived from *porcus-pisces*, and signifies swine-fish.—Meer Schwein, in Germany.—*Shaw's Gen. Zool. Pl. 229.*

affections, and yet how different has been its general estimation with mankind! The dolphin was consecrated to the gods, and the Porpesse has, in nearly all languages, been degraded by the appellation of *Sea-hog*. But the dolphin is indebted for its high repute to the vivid imaginations of the Grecian poets, whilst the Porpesse, almost unknown to the ancients, has received its name from sailors and fishermen. In the naturalist, however, they excite equal interest, and from him they are deserving of equal attention.

It is seldom that Porpesses are seen, except in troops of from six or seven, to thirty and upwards in number. The great size of their caudal fin, and the strong muscles of their tail, contribute to render them very active in the water; along the surface of which, like the dolphins, they sometimes move with surprising rapidity. They frequently gambol about on the water with great vivacity. Their appearance is believed by seamen to be prognosticative of approaching storms; and, on that account, they are held in great detestation. During the most tempestuous weather they are able to surmount the waves, and to pass along the agitated surface of the ocean, fearless of danger, and secure from injury.

They feed on nearly all kinds of fish, but particularly on such as swim in large shoals; as mackrel, herrings, and cod of different kinds, which they pursue with astonishing voracity. But not only do they seek for prey near the surface of the water; they also occasionally descend to the bottom, and root about among the sand and mud, for flat-fish, and marine worms. We are informed, likewise, that whenever a Porpesse happens to be wounded, all the rest of the troop will immediately attack and devour it.

The females seldom produce more than one young-one at a birth. The period of gestation, according to Anderson, is only six months; but, according to Aristotle, it is ten months, which seems much the most probable. The offspring are said to continue

with the mother for nearly a year after they come into the world.

In the river St. Lawrence, in Canada, these animals are very numerous, and, as they there generally frequent the shoal-water in search of prey, the natives adopt the following method of catching them. When the fishing-season arrives, the people collect together a great number of sallow twigs, or slender branches of other trees, and stick them firmly into the sand-banks of the river, which at low water are left dry: this is done on the side towards the river, forming a long line of twigs at moderate distances, which at the upper end is connected with the shore, an opening being left at the lower end, that the Porpesses may enter. As the tide rises, it covers the twigs so as to keep them out of sight: the Porpesse, in quest of his prey, gets within the line, where he continues his chase till he finds, by the ebbing of the tide, that it is time to retire into deep water. He now makes towards the river; but the twigs being then in part above water, and being all agitated by the current, he no sooner sees them shaking about, than he takes fright, and retreats backward as far as he can, from this tremendous rampart. The tide still continuing to ebb, he returns time after time; but, not being able to overcome his dread of these terrific twigs, he rolls about until he is deserted by the water; when those who placed the snare rush out in numbers, properly armed, and in this defenceless state overpower him with ease. In this manner more than a hundred of these huge creatures (one of which will yield about a hogshead of oil) have been killed at a single tide.

The Porpesse was once considered a sumptuous article of food, and is said to have been occasionally introduced at the tables of the old English nobility. It was eaten with a sauce composed of sugar, vinegar, and crumbs of bread. It is, however, now generally neglected, even by the sailors.

In America, the skin of this animal is tanned and

dressed with considerable care. At first it is nearly an inch thick; but it is shaved down till it is quite thin, and becomes somewhat transparent. It is made, by the inhabitants, into waistcoats and breeches; and is said also to make an excellent covering for carriages.

THE GRAMPUS*.

The Grampus is a decided and inveterate enemy to the different species of whales; great flocks of them attack the largest of these, fastening round them like so many bull-dogs, making them roar out with pain, and frequently killing and devouring them. They are also said to attack and devour the seals, which they occasionally find sleeping on the rocks; dislodging them by means of their back fin, and thus precipitating them into the water.

Their agility is such, that these animals are not often caught. They seldom remain more than a moment above the surface of the ocean; but their eager pursuit sometimes throws them off their guard, and allures them into shallow waters. In this case they continue to flounder about, till they are either knocked on the head by persons who happen to observe them, or till the tide flows in to their relief. In one of the poems of Waller, a story (founded on fact) is recorded, of the parental affection of these animals. A Grampus and her cub had got into an arm of the sea, where, by the desertion of the tide, they were enclosed on every side.

* **DESCRIPTION.** The length of this animal is usually from twenty to twenty-five feet. In its general form and colour it much resembles the rest of its tribe; but the lower jaw is considerably wider than the upper, and the body, in proportion, is somewhat broader and more deep. The back fin sometimes measures six feet in length.

It is found in the Mediterranean Sea, as well as in both the Northern and Southern Oceans.

SYNONYMS. *Delphinus orca.* *Linnaeus.*—*L'Orgue.* *La Cope.*—*Killer.* *Catesby.*—*Shaw's Gen. Zool. Pl. 232.*

The men on shore saw their situation, and ran down upon them with such weapons as they could at the moment collect. The poor animals were soon wounded in several places, so that all the immediately surrounding water was stained with their blood. They made many efforts to escape; and the old one, by superior strength, forced itself over the shallow, into the ocean. But, though in safety herself, she would not leave her young one in the hands of assassins. She therefore again rushed in; and seemed resolved, since she could not prevent, at least to share the fate of her offspring. The story concludes with poetical justice; for the tide coming in, conveyed them both off in safety.

BIRDS*.

Rapacious Birds†.

OF THE VULTURES IN GENERAL‡.

THE characters which principally distinguish the birds of this tribe from the eagles and falcons, are the want of feathers on part of the head, and sometimes even on the whole head and neck; and their voracious manners, as they never kill prey from *choice*, but in general devour only such animals as are either dying, or are found dead and putrid. Their sense of smelling is so exquisite, that they are able to scent a dead body at the distance of many miles. "They are (says Mr. Pennant) greedy and voracious to a proverb; and not timid, for they prey in the midst of cities, undaunted by mankind." After some of the battles in the East, where vast slaughter takes place, of elephants, horses, and men, voracious

* For an account of Birds in general, see vol i. p. 19.

† In the birds which constitute the present order, the bill is somewhat hooked, having the upper mandible or division either dilated a little towards the point, or furnished with a tooth-like process. The nostrils are open. The feet are stout, and armed with strong hooked claws, three placed forward, and one backward.

‡ The Vultures have their bill straight, and hooked only at the end; its edges are sharp, like a knife, and the base is covered with a thin skin. The head, cheeks, and, in many species, the neck, are either naked, or clad only with down or short hairs. The tongue is large, fleshy, and cleft at the end. The craw often hangs over the breast. The legs and feet are covered with great scales; and the first joint of the middle toe is connected to that of the outermost by a strong membrane. The claws are large, somewhat hooked, and very blunt; and the inside of the wings is covered with down.

animals crowd to the field from all quarters, and of these, jackals, hyænas, and Vultures, are the chief. Even in the places where the last are otherwise seldom observed, the plain will on such occasions be found covered with them. Vast multitudes will be seen in the air, descending from every side, to partake of the carnage. These the Indians believe to be brought by having an instinctive presentiment of slaughter, some days before the event.

It is observed that Vultures, in general, become less numerous as the climate becomes colder; and that, in the more northern countries, they are never found. Their presence is a kind disposition of Providence, in the hotter regions, to prevent the putrid effluvia of the dead from too much injuring the health of the living.

THE CONDUR*.

Of the strength of this enormous bird we may form some idea, from the account that has been given of one of them which was shot by Father Feuillée, in the valley of Ylo in Peru. He informs us, that he discovered a Condur perched upon a great rock; and that he approached it within musket-shot and fired; but that, as the gun was only loaded with swan-shot, the lead could not do much more than pierce its feathers. He perceiv-

* See Plate xiii. Fig. 1.

DESCRIPTION. This bird considerably exceeds in size the largest eagle. Its expanded wings sometimes extend to the dimensions of eighteen feet. Its body, bill, and talons, are proportionably large and strong; and its courage is equal to its strength. The throat is naked, and of a red colour. The upper parts, in some individuals, (for they differ greatly in colour,) are variegated with black, gray, and white; and the belly is scarlet. The head of a Condur that was shot at Port Desire, off Penguin Island, resembled that of an eagle; except that it had a large comb upon it. Round the neck it had a white ruff, much resembling a lady's tippet. The feathers on the back were as black as jet, and perfectly bright. The legs were remarkably strong and large; the talons like those of an

ed, however, from its motions, that it was wounded: for it rose heavily, and could with difficulty reach another great rock, five hundred paces distant. He therefore charged his piece with a bullet, and hit the bird under the throat. He then saw that he had succeeded, and ran to secure his victim: but it struggled obstinately with death; and, resting upon its back, repelled his attempts with its extended talons. He continues, "I was at a loss on what side to lay hold of it; and I believe that if it had not been mortally wounded, I should have found great difficulty in securing it. At last I dragged it down from the top of the rock; and, with the assistance of a sailor, carried it away to my tent."

Some writers have affirmed that the Condur is twice as large as an eagle, and so strong that it can pounce upon and devour a whole sheep; that it spares not even stags, and can easily overthrow a man. Others say, that its beak is so firm that it can pierce a cow's hide, and that two Condurs are able to kill an ox and devour the carcass:

Ulloã states, that he once saw, in South America, a Condur seize and fly away with a lamb. "Observing (says he) on a hill adjoining to that where I stood, a flock of sheep in great confusion, I saw one of these birds flying upwards from among them, with a lamb betwixt its claws; and when at some height, it dropped it. The bird immediately followed, took it up, and let it fall a second time; when it flew out of sight, on account of

eagle, except that they were not so sharp; and the wings, when extended, measured, from point to point, twelve feet. In the Leverian Museum there were two specimens of the Condur, supposed to be male and female: on the breast they had a kind of pendulous, pear-shaped substance. The male measured ten feet from tip to tip of the wings.

The Condur is an inhabitant of South America.

SYNONYMS. Vultur Gryphus. *Linnaeus*.—Le Condor. *Buffon*.—Magellanic Vulture. *Shaw's Trav.*—Manque, by the inhabitants of Chili.—Condur. *Latham*.—*Latham's Second Supplement*, Fig. 1.

the Indians, who, alarmed by the cries of the boys and the barking of the dogs, were running towards the place.

Frezier, in a voyage to the South Seas, also thus describes the Condur:—"We one day killed a bird of prey called the Condur; which measured nine feet from the end of one wing to the end of the other, and had a brown comb or crest, but not jagged like that of a cock. The fore part of its throat was red, without feathers, like that of a turkey. These birds are generally large and strong enough to take up a lamb. In order to separate one of those animals from the flock, they form themselves into a circle, and advance towards them with their wings extended, that, by being driven too close together, the full-horned rams may not be able to defend their young-ones. They then pick out the lambs, and carry them off. Garcillasso says, there are some Condurs in Peru which measure sixteen feet from the point of one wing to that of the other, and that a certain nation of Indians adore them."

These enormous animals make their nests among the highest and most inaccessible rocks. The female lays two white eggs, somewhat bigger than those of a turkey.

In the country which they inhabit, they seem to supply the place of wolves; and they are as much feared by the inhabitants, as wolves are in other climates. In consequence of this, many modes of destroying them are adopted. Sometimes a person, covering himself with the hide of a newly-skinned animal, goes out, and so manages it, that the bird is induced to attack him in this disguise: other persons that have hidden themselves, then come forward to his assistance; and then all of them, at once falling on the bird, overpower and kill it. A dead carcass is also sometimes put within a very high enclosure; and when the Condur has satiated himself, and is unable to rise freely, persons are in readiness to subdue him. On these latter occasions the bird is inactive; but in general he possesses a very quick flight, and frequently soars to a height beyond the

reach of human vision. Sometimes these birds are caught by means of traps and springes.

It has generally been imagined, that the accounts of this dreadful animal gave rise to the exaggerated description of the bird that makes so conspicuous a figure in the Arabian Tales, under the name of *Roc*: but this seems very improbable, as we have no satisfactory evidence of the Condur having ever been found on the Old Continent. The traditions respecting the *Roc* originated in a very different kind of bird; a variety of the bearded eagle, or the well-known lammer-geyer of the Alps*, which is occasionally seen among the mountains of the East.

THE CARRION VULTURE†.

In some of the countries bordering upon the torrid zone, these birds haunt the villages and towns in immense multitudes. In Carthage, they may be seen sitting on the roofs of the houses, or even stalking along the streets. They are here of infinite service to the inhabitants, by devouring that filth which otherwise, by its intolerable stench, would render the climate still more unwholesome than it is. When they find no food in the cities, they seek for it among the cattle of the adjoining pastures. If any animal be unfortunate enough to have a sore on his back, they instantly alight on it,

* *Falco barbatus* of Linnæus.

† DESCRIPTION. The length of this bird is about four feet and a half, and its general weight betwixt four and five pounds. The head is small; and covered with a red skin, beset only with a few black bristles; which gives it a distant resemblance to a turkey. The whole plumage is dusky, mixed with purple and green. The legs are of a dirty flesh-colour, and the claws black.

SYNONYMS. Vulture *Aura*. *Linn.*—*L'Urubu*. *Vautour*. *Buffon*.—Turkey Buzzard. *Catesby*.—Carrion Crow. *Sloane*.—Carrion Vulture. *Latham*.—*Urubu*, by the natives of Cayenne.

and attack the part affected. The unfortunate beast may in vain attempt to free itself from the gripe of their talons: even rolling on the ground is of no effect, for the Vultures never quit their hold till they have completed its destruction.

In few creatures are the designs of Providence more clearly developed than in these. Filthy as they are in their manners, their appearance, and their smell, yet is even this filthiness a blessing to mankind. In hot climates, where putridity takes place in a few hours after death, what might be the effects of the aggregated stench, if it were not for the exertion of animals of this description! But in some countries they are rendered even of still further importance to mankind, by destroying the eggs of the alligator, an animal which otherwise must become intolerable by its prodigious increase. They watch the female crocodile in the act of depositing her eggs in the sand; and no sooner does she retire into the water, than they dart to the spot, and feast upon the contents of the eggs.

The resemblance of these birds, at a distance, to the turkey, was the cause of considerable vexation to one of the officers engaged in the expedition round the world under Woodes Rogers. In the island of Lobos, immense numbers of them were seen; and, highly delighted with the prospect of such delicious fare after a long and tedious voyage, the officer would not wait even till the boat could put him ashore, but, with his gun in his hand, leapt overboard and swam to land. Approaching a large collection of the birds, he fired among them and killed several: but when he came to seize his game, he was sadly disappointed in finding that they were not turkeys, and that their stench was almost insupportable.

The bodies of the Carrion Vultures are extremely offensive to the smell; and they perch at night on rocks or trees, with their wings partly extended, apparently to purify themselves. They soar to a vast height, and have in the air the sailing motions of the kite. Carrion

sure of danger, however, they have the power of ridding themselves of their burden, by vomiting up what they have eaten; and then they fly off with greater facility.

They frequent all the country at the Cape of Good Hope; and are so familiar, that they often descend, in great numbers, near the entrance to the shambles of the Cape Town, and there devour the heads, entrails, and other offal, of the animals slaughtered for the market. On the sea-shores they are also very abundant, voraciously devouring all such animal substances as have been thrown upon the coast by the tides. They subsist likewise on crabs, tortoises, shell-fish, and even locusts.

In anatomizing a dead animal, Kolben informs us that these birds exhibit infinite dexterity. They separate the flesh from the bones in such a manner as to leave the skin almost entire. On approaching a body thus destroyed, no person, till he had examined it, could possibly imagine that it was merely bone and skin, deprived entirely of the internal substance. They begin by tearing an opening in the belly, through which they pluck out and greedily devour the entrails: then, entering the hollow, they also tear away all the flesh; and this without affecting the external appearance. "It often happens (says this writer) that an ox returning home alone to its stall from the plough, lies down by the way: it is then, if the Vultures perceive it, that they fall upon it with fury, and inevitably devour the unfortunate animal. They sometimes attempt the oxen while grazing in the fields; and, to the number of a hundred or more, make their sudden attack all together."

Ravenous as these birds usually are, they are capable of existing for a great length of time without food. In the deserts their subsistence is sometimes very precarious. M. Le Vaillant states, that in the crop of some that he had killed, he had found nothing but pieces of bark, or a small quantity of clay: in the crop of others he had found only bones: and again, of others, the dung

of animals. When urged by hunger, they are frequently known to devour their own species.

OF THE FALCON OR EAGLE TRIBE*.

This, as well as the last, is an excessively rapacious tribe of birds. They prey altogether on animal food; yet they seldom feed on carrion, except when driven to it by necessity. They are able to sustain hunger for a very great length of time; often taking in as much food at once, as will last them for several days without a fresh supply. Many of these species eat fish, and others are content to subsist on snakes and reptiles.

They never associate; and, except during the breeding season, even two of them are seldom seen together. They are extremely quick-sighted, and soar to amazing heights in the air. When they discern their prey, they dart upon it with the swiftness of an arrow: and their strength is so great, that some of them have been known to carry to their offspring a load nearly as heavy as themselves, and from a distance of forty miles and upwards. Most of them build their nests in lofty and

* The bill is hooked; and is furnished at the base with a naked membranaceous skin, called *cere*. The head and neck are thickly beset with feathers. The nostrils are small, and placed in the cere; and the tongue is broad, fleshy, and generally cleft at the end. The legs and feet are strong, muscular, and scaly; and the large, hooked, and very sharp claws, are well calculated for the predacious habits of the animals. The middle toe is connected to the outermost by a strong membrane, and the claw of the outer toe is smaller than that of any of the others.

This tribe differs from the last principally in the animals having their bill and claws much more hooked and sharp; in having the head and neck in general thickly covered with feathers, instead of being naked, or covered only with down; and also in their usually killing their prey and eating it while fresh. The exuviae and bones of their food they always emit at the mouth, in the form of round pellets.

inaccessible places; but a few of the species form them on the ground. In general the females are much larger than the males; for the purpose, as some persons have conjectured, of more easily providing food for their offspring.

About a hundred and forty different species have been discovered, of which upwards of twenty are natives of these kingdoms; but, from the extreme difference in appearance, between many of the males and females of the same species, it is sometimes a difficult task to ascertain them.

THE SECRETARY FALCON*.

In its general form this bird resembles, in some degree, both the eagle and the crane; having its head shaped like that of the former, and its body somewhat like that of the latter. From the back of the head spring several long dark-coloured feathers, that hang loose behind like a pendent crest, which the bird can erect or depress at pleasure. "The Dutch (says M.

* See Plate xiii. Fig. 2.

DESCRIPTION. This bird, when standing erect, measures about three feet from the top of the head to the ground. The bill is black, sharp, and crooked, like that of an eagle. The cere is white; and round the eyes there is a place bare of feathers, and of a deep orange colour. The upper eye-lids are beset with strong bristles, like eye-lashes. The general colour of the plumage is a blueish ash-colour; and the ends of the wings, the thighs, and vent, are blackish. The tail is somewhat ash-coloured, except at the end, which, for above an inch, is black, and then tipped with white: the two middle feathers are twice as long as any of the rest. The legs are long, brown, and stouter than those of a heron; the claws are shortish, but crooked, and of a black colour.

The Secretary Falcon is a native of the interior parts of Africa, Asia, and the Philippine Islands.

SYNONYMS. *Falco serpentarius.* Linn.—Le Sécretaire, ou le Messenger. Buffon.—Secretary Vulture. Latham.—*Latham's Syn. vol. i. tab. 2.*

Le Vaillant) gave to it the name of Secretary, on account of the bunch of quills behind its head: for in Holland clerks, when interrupted in their writing, stick their pen in their hair behind their right ear; and to this the tuft of the bird was thought to bear some resemblance."

The Hottentots at the Cape of Good Hope distinguish this bird by a name that signifies the serpent-eater; and it would almost seem that nature had principally destined it for the purpose of confining within due bounds the race of serpents, which is very extensive in all the countries that this bird inhabits.

The mode in which it seizes these dangerous creatures is very peculiar. When it approaches them, it is always careful to carry the point of one of its wings forward, in order to parry off their venomous bites; sometimes it finds an opportunity of spurning and treading upon its antagonist, or else of taking him on its pinions and throwing him into the air. When, by this proceeding, it has at length wearied him out, and rendered him almost senseless, it kills and swallows him at leisure without danger.

M. Le Vaillant tells us, that he was witness to an engagement between a Secretary Falcon and a serpent. The battle was obstinate, and was conducted with equal address on both sides. But the serpent at length feeling the inferiority of his strength, employed, in his attempt to regain his hole, all that cunning which is attributed to the tribe; while the bird, apparently guessing his design, stopped him on a sudden and cut off his retreat, by placing herself before him at a single leap. On whatever side the reptile endeavoured to make his escape, his enemy still appeared before him. Then, uniting at once both bravery and cunning, the serpent boldly erected himself to intimidate the bird, and, hissing dreadfully, displayed his menacing throat, inflamed eyes, and a head swoln with rage and venom. "Sometimes this threatening appearance produced a momentary suspension of hostilities; but the bird soon

returned to the charge, and, covering her body with one of her wings as a buckler, struck her enemy with the bony protuberance of the other. I saw him at last stagger and fall: the conqueror then fell upon him to dispatch him, and, with one stroke of her beak, laid open his skull."

At this instant M. Le Vaillant fired at and killed the bird. In her craw he found, on dissection, eleven tolerably large lizards; three serpents, each as long as his arm; eleven small tortoises, most of which were about two inches in diameter; and a number of locusts and other insects, several of them sufficiently whole to be worth preserving and adding to his collection. He observed too, that, in addition to this mass of food, the craw contained a sort of ball, as large as the head of a goose, formed of the vertebræ of serpents and lizards; shells of tortoises; and wings, claws, and shields, of different kinds of beetles.

Dr. Solander says, that he has seen one of these birds take up a snake, a small tortoise, or other reptile, in its claw, and dash it with so much violence against the ground, that the creature immediately died; if, however, this did not happen to be the case, he tells us that the operation was repeated till the victim was killed; after which it was eaten.

The Secretary is easily tamed; and when domesticated, will eat any kind of food, either dressed or raw. If well fed, it not only lives with poultry on amicable terms, but, when it sees any of them quarrelling, it will even run to part the combatants and restore order. This bird, it is true, if pinched with hunger, will devour, without scruple, the ducklings and chickens; but this abuse of confidence, if it may be so called, is the effect of severe hunger, and the pure and simple exercise of that necessity which rigorously devotes one half of the living creation to satisfy the appetite of the rest.

Tame Secretaries were seen by M. Le Vaillant in several of the plantations of the Cape. He says that they commonly lay two or three white eggs, nearly as

large as those of a goose. The young-ones remain a great while in the nest; because, from their legs being long and slender, they cannot easily support themselves.

However shrewd and cunning this bird may be in its general conduct, yet M. de Buffon seems to have attributed to it a much greater degree of intelligence than it really possesses:—"When a painter (says he, quoting a letter of the viscount de Querhoent) was employed in drawing one of the Secretary Falcons, it approached him, looked attentively upon his paper, stretched out its neck, and erected the feathers of its head, as if admiring its own figure. It often came with its wings raised, and its head projected, to observe what he was doing. It also thus approached me two or three times, when I was sitting at a table, in its hut, in order to describe it." This stretching out of its head, and erection of its crest, seem, however, to have arisen from nothing more than that love which almost all domesticated birds evince of having their heads scratched. And these birds, when rendered familiar, are well known to approach every person who comes near them, and to stretch out their necks by way of making known this desire.

This singular bird has not long been known, even at the Cape: but, when we consider its sociable and familiar disposition, we are disposed to think that it would be advisable to multiply the species, particularly in our colonies; for it is hardy enough to endure even European climates, where it might be serviceable in destroying not only pernicious reptiles, but rats and mice.

The Secretary Falcons make, with twigs, a flat nest, full three feet in diameter, and line it with wool and feathers. This is usually formed in some high tuft of trees; and is often so well concealed, as not easily to be discovered even by the most scrutinizing eye. It is a very singular circumstance, that in their contests these

birds always strike forward with their legs; and not, like all others, backward.

THE BEARDED EAGLE, OR LAMMER GEYER *.

The Bearded Eagles, of which so many fabulous tales have been related, are inhabitants of the highest parts of the great chain of the Alps that separates Swisserland from Italy. They are frequently seen of immense size. One that was caught in the canton of Glarus, measured, from the tip of its beak to the extremity of its tail, nearly seven feet, and eight feet and a half from tip to tip of its wings; but some have been shot that were much larger.

These birds form their nests in the clefts of rocks, inaccessible to man; and usually produce three or four young-ones at a time. They subsist on alpine animals, such as chamois, white hares, marmots, kids, and particularly lambs. It is from their devouring the latter, that they are called, by the Swiss peasants, *Lammer-geyer*, or Lamb-Vultures†. The Bearded Eagles seldom appear except in small parties, usually consisting of the two old birds and their young-ones.

If common report may be credited, this rapacious bird does not confine its assaults to the brute creation, but sometimes attacks and succeeds in carrying off

* DESCRIPTION. The beak is of a purplish flesh-colour, and hooked only at the point; and the head and neck are covered with feathers. Beneath the throat hangs a kind of beard, composed of very narrow feathers, like hairs. The legs are covered with feathers quite to the toes, which are yellow: the claws are black. The body is blackish-brown above; and the under parts are white, with a tinge of brown.

SYNONYMS. *Falco barbatus*. Linn.—*Gmel.*—*Vultur barbatus*. Linn.—*Le Gypaete des Alpes*. Sonnini's Edit. of *Buffon*.—*Lammer-geyer*. Var.—*Bearded Bastard-eagle*. Kerr.

† It is, however, to be remarked, that the Swiss do not confine the appellation of *Lammer-geyer* to this species, but sometimes extend it to other large birds of prey.

young children. Gesner, on the authority of Fabricius, says, respecting it, that some peasants between Meissen and Brisa, in Germany, losing every day some of their cattle, which they sought for in the forests in vain, observed by chance a very large nest resting on three oaks, constructed with sticks and branches of trees, and as wide as the body of a cart. They found in this nest three young birds, already so large that their wings extended seven ells. Their legs were as thick as those of a lion; and their claws the size of a man's fingers. In the nest were found several skins of calves and sheep.

It appears to have been from one of the two varieties of this bird, that are sometimes seen in Persia and other eastern countries, rather than the condur, as is generally supposed, that the fabulous stories of the *Roc* of the Arabian Tales originated; since the latter is confined to the wild districts of South America, and has never been ascertained to have visited the old continent.

One of these varieties also it is that Mr. Bruce describes as having seen on the highest part of the mountain of Lamalmon, not far from Gondar, the capital of Abyssinia. He says, that on account of the tuft of hair growing beneath its beak, the inhabitants call it *Abou Duck'n*, or Father Long-beard. Mr. Bruce supposed it to be not only one of the largest of the Eagle kind, but one of the largest birds in the creation. From wing to wing it measured eight feet four inches; and from the tip of its tail to the point of its beak, when dead, four feet seven inches. It weighed twenty-two pounds, and was very full of flesh. Its legs were short, but the thighs extremely muscular. Its eyes were remarkably small, the aperture being scarcely half an inch across. The crown of the head was bald, as was also the front, where the bill and skull joined.

“This noble bird (says this celebrated traveller)

was not an object of any chase or pursuit, nor stood in need of any stratagem to bring him within our reach: Upon the highest top of the mountain Lamalmon, while my servants were refreshing themselves from that toilsome, rugged ascent, and enjoying the pleasures of a most delightful climate, eating their dinner in the outer air, with several large dishes of boiled goat's flesh before them, this enemy, as he turned out to be to them, suddenly appeared: he did not stoop rapidly from a height, but came flying slowly along the ground, and sat down close to the meat, within the ring the men had made round it. A great shout, or rather cry of distress, called me to the place. I saw the Eagle stand for a minute, as if to recollect himself; while the servants ran for their lances and shields. I walked up as nearly to him as I had time to do. His attention was fixed upon the flesh. I saw him put his foot into the pan, where there was a large piece, in water, prepared for boiling; but finding the smart, which he had not expected, he withdrew it, and forsook the piece that he held.

"There were two large pieces, a leg and a shoulder lying upon a wooden platter: into these he thrust both his claws, and carried them off; but I thought he still looked wistfully at the large piece which remained in the warm water. Away he went slowly along the ground, as he had come. The face of the cliff over which criminals are thrown, took him from our sight. The Mahometans that drove the asses, were much alarmed, and assured me of his return. My servants, on the other hand, very unwillingly expected him, and thought he had already taken more than his share.

"As I had myself a desire of more intimate acquaintance with this bird, I loaded a rifle-gun with ball, and sat down close to the platter by the meat. It was not many minutes before he came, and a prodigious shout was raised by my attendants, 'He is coming, he is coming,' enough to have dismayed a less courageous animal. Whether he was not quite so hungry as at his

first visit, or suspected something from my appearance, I know not; but he made a short turn, and sat down about ten yards from me, the pan with the meat being between me and him. As the field was clear before me, and I did not know but his next move might bring him opposite to some of my people, so that he might actually get the rest of the meat and make off, I shot him with the ball through the middle of his body, about two inches below the wing, so that he lay down upon the grass without a single flutter.

“Upon laying hold of his monstrous carcass, I was not a little surprised at seeing my hands covered and tinged with yellow powder or dust. On turning him upon his belly, and examining the feathers of his back, they also produced a dust, the colour of the feathers there. This dust was not in small quantities; for, upon striking the breast, the yellow powder flew in full greater quantity than from a hair-dresser's powder-puff. The feathers of the belly and breast, which were of a gold colour, did not appear to have any thing extraordinary in their formation; but the large feathers in the shoulder and wings seemed apparently to be fine tubes, which, upon pressure, scattered this dust upon the finer part of the feather; but this was brown, the colour of the feathers of the back. Upon the side of the wing, the ribs, or hard part of the feathers, seemed to be bare, as if worn; or, I rather think, were renewing themselves, having before failed in their functions.

“What is the reason of this extraordinary provision of nature, it is not in my power to determine. As it is an unusual one, it is probably meant for a defence against the climate, in favour of birds which live in those almost inaccessible heights of a country doomed, even in its lowest parts, to several month's excessive rain.”

THE GOLDEN EAGLE*.

This Eagle has generally been considered by mankind, to hold the same fabulous or imaginary dominion over the birds, which has been attributed to the lion over quadrupeds. M. de Buffon, adopting the idea, is also of opinion, that the eagle and the lion have many points of resemblance, both physical and moral. "Magnanimity (he says) is equally conspicuous in both; they despise the small animals, and disregard their insults. It is only after a series of provocations, after being teased with the noisy or harsh notes of the raven or magpie, that the eagle determines to punish the temerity or the insolence of these birds with death. Besides, both disdain the possession of that property which is not the fruit of their own industry; rejecting with contempt the prey which is not procured by their own exertions. Both are remarkable for their temperance. This species seldom devours the whole of his game, but, like the lion, leaves the fragments and offals to other animals. Though famished for want of prey, he disdains to feed upon carrion.

"Like the lion, also, he is solitary; the inhabitant of a desert, over which he reigns supreme, excluding all

* See Plate vi. Fig. 7.

DESCRIPTION. The Golden Eagle is a large bird, weighing twelve or fourteen pounds; measuring in length three feet, and from tip to tip of his wings seven feet and a half. The bill is deep blue, and the cere yellow. The head and neck are of a dark brown, bordered with tawny: the hind part of the head is of a bright rust-colour, and the rest of the body brown. The tail is blotched with ash-colour. The legs are yellow, and feathered to the toes, which are scaly: the claws are remarkably large, the middle one being two inches in length.

This bird is a native of Europe, and even of some of the more mountainous parts of Great Britain.

SYNONYMS. *Falco Chrysaetos.* Linn.—Le Grand Aigle. Buff.—Orn, in Norway.—Golden Eagle. Var.—Bew. Birds, p. 5.—Penn. Brit. Zool. vol. i. tab. 16.

the other birds from his silent domain. It is perhaps even more uncommon to see two pairs of Eagles in the same tract of mountain, than two families of lions in the same part of the forest. They separate from each other at such wide intervals, as to afford ample range for subsistence; and esteem the value and extent of their dominion to consist in the abundance of prey with which it is replenished.

“The eyes of the Eagle have the glare of those of the lion, and are nearly of the same colour; the claws are of the same shape; the organs of sound are equally powerful, and the cry equally terrible*. Destined, both of them, for war and plunder, they are equally fierce, bold, and untractable. It is impossible to tame them, unless they be caught when in their infancy. It requires much patience and art to train a young Eagle to the chase; and after he has attained his proper age and strength, his caprices and momentary impulses of passion, are sufficient to create suspicions and fears in his master. Authors inform us, that the Eagle was anciently used in the East for falconry; but this practice is now laid aside. He is too heavy to be carried on the hand: nor is he ever rendered so tame or so gentle, as to remove all suspicions of danger. His bill and claws are crooked and formidable: his figure corresponds with his instinct: his body is robust; his legs and wings are strong; his flesh is hard; his bones are firm; his feathers stiff; his attitude bold and erect; his movements quick; his flight rapid. He rises higher in the air than any other of the winged race; and hence he was termed by the ancients the *Celestial Bird*, and was regarded in their mythology as the messenger of Jupiter. He can distinguish objects at an

* The voice of the lion and Eagle, notwithstanding this assertion of M. de Buffon, will not bear comparison. The one is a deep and dreadful bass; and the other a piercing treble, altogether destitute of majesty.

immense distance; but his power of smell is inferior to that of the Vulture. By means of his exquisite sight, he pursues his prey; and, when he has seized it he checks his flight, and places it upon the ground to examine its weight, before he carries it off. Though his wings are vigorous; yet, his legs being stiff, it is with difficulty he can rise, especially if he be loaded. He is able to bear away geese and cranes: he also carries off hares, young lambs, and kids. When he attacks fawns or calves, he instantly gluts himself with their blood and flesh, and afterwards transports their mangled carcasses to his nest, or *aery*."

Formed for war, these birds are solitary and unsocial. They are also fierce, but not implacable; and, though not easily tamed, are capable of great docility. They will not, however, bear the least harsh usage without endeavouring to resent it. A gentleman who lived in the south of Scotland, had, not many years ago, a tame Eagle. This bird the keeper one day injudiciously lashed with a horsewhip. About a week afterwards the man chanced to stoop within reach of its chain; when, recollecting the insult, the enraged animal flew in his face with so much fury and violence, that he was terribly wounded, but was driven so far back by the blow, as to be out of further danger. The screams of the Eagle alarmed the family; who found the man lying at some distance, covered with blood, and equally stunned with the fright and the fall. The bird was still pacing and screaming in a manner not less threatening than majestic; and, shortly afterwards, he broke his chain and escaped.

The Golden Eagles build their nests on elevated rocks, ruinous and solitary castles and towers, and other sequestered places. The nest is quite flat; and not hollow, like the nests of other birds. The male and female commonly place it between two rocks, in a dry and inaccessible situation. The same nest, it is said, serves the Eagle during life. Its form resembles that of a floor. Its basis consists of sticks about five

or six feet in length, which are supported at each end; and these are covered with several layers of rushes and heath.

An Eagle's nest which was, some years ago, found in the Peak of Derbyshire, was made of great sticks, and one end of it rested on the edge of a rock, the other on a birch-tree. Upon these was a layer of rushes, over them a layer of heath, and on the heath rushes again; upon which lay one young Eagle, and an addle egg; and by them a lamb, a hare, and three heath-pouts. The nest was about two yards square, and had no hollow in it.

The females never lay more than two or three eggs. These they hatch in thirty days. They feed their young-ones with the slain carcasses of such small animals as come in their way; and, though they are at all times formidable, they are particularly so while bringing up their offspring.

It is said that once, during a summer of famine, a countryman got a comfortable subsistence for his family out of an Eagle's nest. He protracted the assiduity of the old birds beyond their usual time, by clipping the wings, and thus retarding the flight, of their young-ones; and tying them so as to increase their cries, which are always found to increase the dispatch of the parents in supplying their wants. It was fortunate for him that the old ones did not detect the plunderer, otherwise their resentment might have proved fatal. A peasant, not many years ago, resolved to rob an Eagle's nest, which he knew to be built on a small island in the beautiful lake of Killarney. He stripped himself for this purpose, and swam over when the old birds were gone; but, in his return, while yet up to the chin in water, the parents, coming home, and missing their offspring, quickly fell on the plunderer, and killed him on the spot.

Several instances have been recorded of children being seized and carried off to their nests by Eagles. In the year 1737, in the parish of Norderhougs, in Nor-

way, a boy somewhat more than two years old, was running from the house to his parents, who were at work in the fields at no great distance, when an Eagle pounced upon and flew off with him, in their sight. It was with the bitterish anguish that they beheld their child dragged away, but all their screams and efforts to prevent it were in vain. Anderson, in his History of Iceland, says, that in that island children of four or five years of age have been sometimes taken away by Eagles; and Ray relates, that in one of the Orkneys, a child of a year old was seized in the talons of an Eagle, and carried above four miles to its nest. The mother, knowing the place, pursued the bird, found her child in the nest, and took it away unhurt.

The form of the Golden Eagles is extremely muscular; but their chief strength lies in their beak, their talons, and their wings. There is scarcely any quadruped a match for them; as they are capable of giving the most terrible annoyance, without much danger to themselves. One flap of their wing has been known to strike a man dead.

These birds are remarkable for longevity, and for their power of sustaining abstinence from food for a great length of time. One that died at Vienna, had been in confinement above a hundred years; and one that was in the possession of a gentleman of Conway, in Caernarvonshire, was, from the neglect of his servants, kept for three weeks without any sustenance.

THE OSPREY, OR FISHING EAGLE*.

The Osprey frequents large rivers, lakes, and the sea-shores both of Europe and America. In the latter

* DESCRIPTION. The length, from the point of the beak to the end of the tail, is about two feet, and the expanded wings measure somewhat more than five feet. The wings, when closed, reach beyond the end of the tail. The head is small; and is black or brown, variegated with white at the

country, particularly, it often affords amusement to strangers. During the spring and summer months, this bird is frequently seen hovering over the rivers, or resting on the wing for several minutes at a time, without the least visible change of place. It then suddenly darts down, and plunges into the water, whence it seldom rises again without a fish in its talons. When it rises into the air, it immediately shakes off the water, which it throws around like a mist, and pursues its way towards the woods. The Bald Eagle, which, on these occasions, is generally upon the watch, instantly pursues, and, if it can overtake, endeavours to soar above it. The Osprey, solicitous for its own safety, drops the fish in alarm; the Eagle immediately pounces at this prey, and never fails to catch it before it reaches the water, leaving the hawk to begin his work afresh.

It is somewhat remarkable, that whenever the Osprey catches a fish, it always makes a loud screaming noise; which the Eagle, if within hearing, never fails to take as a signal. Sometimes it happens, that, if the Osprey be tolerably large and strong, it will contend with the Eagle for its rightful property; and, though generally conquered in the end, a contest of this sort has been sustained for upwards of half an hour.

The Osprey usually builds its nest on the ground, among reeds; and lays three or four white eggs, rather smaller than those of a hen. Colonel Montague states, that he once saw the nest of this bird on the top of a chimney of a ruin, in an island of Loch Lomond in

top. The upper parts of the body, and the whole of the tail, are brown, and the belly is white. It is a singular circumstance in this bird, that the outer toe turns easily backward, so as on occasion to have the toes two forward and two backward, and it has a much larger claw than the inner one. This, and the peculiar roughness of the whole foot underneath, are well adapted for the securing of its prey.

SYNONYMS. *Falco Haliætos*. Linn.—Le Balbuzzard. *Buffon*.—Bald Buzzard, or Sea Eagle. *Ray*.—Fishing Hawk. *Catesby*.—*Bew's Birds*. p. 13.

Scotland. It was large and flat, formed of sticks laid across, and lined with flags; and it rested on the sides of the chimney.

THE BLACK OR COMMON EAGLE*.

The most perpendicular and inaccessible rocks are generally selected as the habitation of the Black Eagles; and from these they occasionally descend into the plains to feed. As these birds are sometimes very destructive amongst lambs and other small animals, it is not unusual to lay snares and traps in order to kill them; but their sagacity is such, that they are seldom caught. They attack and devour indiscriminately every kind of bird; and, when hard pressed by hunger, will feed on carrion.

Their aeries are usually formed amongst the branches of the highest trees; and one of them, which was seen in the mountains of Auvergne, is described to have measured more than five superficial feet.

An Eagle of this species, which was in the possession of the Abbé Spallanzani, was so powerful, as to be able to kill dogs that were much larger than itself. When the Abbé forced one of these animals into the apartment where the Eagle was kept, the bird immediately ruffled the feathers on its head and neck, cast a dreadful look at its victim, and, taking a short flight, immediately alighted on his back. It held the neck firmly with one foot, by which the dog was prevented from turning his head to bite, and with the other

* DESCRIPTION. Its length is two feet ten inches; the bill is horn-coloured, and the cere reddish. The general colour of the plumage is blackish; and the head and upper parts of the neck, are mixed with yellow. The lower half of the tail is white, with blackish spots; the other half blackish. The legs are covered with dirty white feathers: the toes are yellow, and the claws black.

SYNONYMS. *Falco melanaëtos*. *Linn.*—*L'Aigle commun.* *Buffon.*

grasped one of his flanks, at the same time driving its talons into the body; and in this attitude it continued, till the dog expired with fruitless outcries and efforts. The beak, which had been hitherto unemployed, was now used for making a small hole in the skin: this was gradually enlarged; and from this, the bird began to tear away and devour the flesh, and went on till he was satisfied.

Notwithstanding its ferocity *in attacking animals, this Eagle never gave any molestation to man. Its owner, who constantly fed it, could safely enter the apartment where the bird was kept, and could behold these assaults without dread or apprehension; nor was the Eagle prevented from attacking the living prey he offered to it, or rendered shy by his presence. In general, when it had flesh sufficient, it made only one meal a day. The Abbé found, by weighing what it ate, that thirty ounces of flesh, one day with another, were fully sufficient for it.

These birds are found in all quarters of the world; and in hot as well as cold climates. Poiret speaks of having encountered them in the plains of Barbary. They are also very common in several parts of Europe, in Persia, and Arabia; and also in most of the mountainous districts of America.

THE COMMON BUZZARD*.

This well-known bird is of a sedentary and indolent disposition: it will frequently continue perched for

DESCRIPTION. The Buzzard is about twenty inches in length, and four feet and a half in breadth. Its bill is lead-coloured. The upper parts of the body are dusky; and the lower pale, varied with brown. The wings and tail are marked with bars of a darker hue. The tail is grayish beneath, and tipped with dusky white. The legs are yellowish, and the claws black.

SYNONYMS. *Falco Buteo.* Linn.—*La Buse.* Buffon.—*Bew.* Birds, p. 15.—*Penn. Brit. Zool. vol. i. tab. 25.*

many hours successively upon a tree or eminence, from which it darts upon such prey as comes within its reach. It feeds on birds, small quadrupeds, reptiles, and insects. Though possessed of strength, agility, and weapons to defend itself, it is cowardly, inactive, and slothful. It will fly from a sparrow-hawk; and, when overtaken, will suffer itself to be beaten, and even brought to the ground, without resistance.

There are few birds of the hawk species more common in this country, than the Buzzard. It breeds in large woods; and usually builds in an old crow's nest, which it enlarges, and lines with wool and other soft materials. It feeds and tends its offspring, which are generally two or three in number, with great assiduity. Mr. Ray affirms, that if the female be killed during the time of incubation, the male Buzzard will take the charge of the young-ones, and will patiently rear them till they are able to provide for themselves.

The following anecdote, which was related by M. Fontaine, curé de St. Pierre de Belesme, to M. de Buffon, will show that the Buzzard may be so far tamed, as to be rendered a faithful domestic. "In 1763, (says this gentleman,) a Buzzard was brought to me, that had been taken in a snare. It was at first wild and ferocious. I undertook to tame it; and I succeeded, by leaving it to fast, and constraining it to come and eat out of my hand. By pursuing this plan, I brought it to be very familiar; and, after having shut it up about six weeks, I began to allow it a little liberty, taking the precaution, however, to tie both pinions of its wings. In this condition it walked out into my garden, and returned when I called it to feed. After some time, when I judged that I could trust to its fidelity, I removed the ligatures; and fastened a small bell, an inch and a half in diameter, above its talon, and also attached to its breast a bit of copper, having my name engraved on it. I then gave it entire liberty, which it soon abused; for it took wing, and flew as far as the forest of Belesme. I gave it up for

lost; but four hours afterwards, I saw it rush into my hall, pursued by five other Buzzards, which had constrained it to seek again its asylum.

“After this adventure, it preserved its fidelity to me, coming every night to sleep on my window. It soon became familiar; attended constantly at dinner; sat on a corner of the table, and often caressed me with its head and bill, emitting a weak, sharp cry, which, however, it sometimes softened. It is true that I alone had this privilege. It one day followed me when I was on horseback, more than two leagues, flying above my head.

“It had an aversion both to dogs and cats; nor was it in the least afraid of them: it had often tough battles with them, but always came off victorious. I had four strong cats, which I collected into my garden with my Buzzard. I threw to them a bit of raw flesh: the nimblest cat seized it; the rest pursued, but the bird darted upon her, bit her ears with his bill, and squeezed her sides with his talons so forcibly, that the cat was obliged to relinquish her prize. Often another cat snatched it the instant it dropped; but she suffered the same treatment, till the Buzzard got entire possession of the plunder. He was so dexterous in his defence, that, when he perceived himself assailed at once by the four cats, he took wing, and uttered a cry of exultation. At last, the cats, chagrined by their repeated disappointment, would no longer contend with him.

“This Buzzard had a singular antipathy: he would not suffer a red cap to remain on the head of any of the peasants; and so alert was he in whipping it off, that they found their heads bare without knowing what was become of their caps. He also snatched away wigs, without doing any injury; and he carried these caps and wigs to the tallest tree in a neighbouring park, which was the ordinary deposit of his booty.

“He would suffer no other birds of prey to enter his domain: he attacked them boldly, and put them to flight. He did no mischief in my court-yard; and the

poultry, which at first dreaded him, grew insensibly reconciled to him. The chickens and ducklings received not the least harsh usage; and yet he bathed among the latter. But, what is singular, he was not gentle to my neighbours' poultry; and I was often obliged to publish that I would pay for the damages that he might occasion. However, he was frequently fired at; and, at different times, received fifteen musket-shots without suffering any fracture. But once, early in the morning, hovering over the skirts of a forest, he dared to attack a fox; and the keeper, seeing him on the shoulders of the fox, fired two shots at him: the fox was killed, and the Buzzard had his wing broken; notwithstanding this fracture, he escaped from the keeper, and was lost for seven days. This man having discovered, from the noise of the bell, that it was my bird he had shot, came the next morning to inform me. I sent to search near the spot; but the bird could not be found, nor did it return till seven days afterwards. I had been used to call him every evening with a whistle: this he did not answer for six days; but on the seventh I heard a feeble cry at a distance, which I judged to be that of my Buzzard: I repeated the whistle a second time, and heard the same cry. I went to the place from which the sound came; and, at last, found my poor Buzzard with his wing broken. He had travelled more than half a league on foot to regain his asylum, from which he was then distant about a hundred and twenty paces. Though he was extremely reduced, he gave me many caresses. It was six weeks before he was recruited, and his wounds were healed; after which he began to fly as before, and to follow his old habits: these he continued for about a year, and then disappeared for ever."

THE GENTIL FALCON*.

When, in ancient times, the sport of falconry was in

* DESCRIPTION. The Gentil Falcon measures about two

high repute, this was one of the species of Falcons which was employed. It is a spirited and dauntless bird; and in a wild state is a native of the rocks of Caernarvonshire, and the Highlands of Scotland.

In Syria there is a small variety of the Gentil Falcon, which the inhabitants denominate Shaheen; and which is of so fierce and courageous a disposition, that it will attack any bird, however large or powerful, which presents itself. "Were there not (says Dr. Russel, in his account of Aleppo) several gentlemen now in England, to bear witness to the fact, I should hardly venture to assert that, with this bird, which is about the size of a pigeon, the inhabitants sometimes take large eagles. This hawk, in former times, was taught to seize the eagle under the pinion, and thus depriving him of the use of one wing, both birds fell to the ground together; but I am informed that the present mode is to teach the hawk to fix on the back, between the wings, which has the same effect, only that, the bird tumbling down more slowly, the falconer has more time to come to his hawk's assistance; but in either case, if he be not very expeditious, the falcon is inevitably destroyed.

"I never saw the Shaheen fly at eagles, that sport having been disused before my time; but I have often seen him take herons and storks. The hawk, when thrown off, flies for some time in a horizontal line, not six feet from the ground, then mounting perpendicularly, with astonishing swiftness, he seizes his prey.

feet in length. Its beak is of a red colour, with a yellow cere. The head and back part of the neck are rusty, with oblong black spots. The back and wings are brown, and each feather of the wings is tipped with rust-colour. The quills are dusky; the outer webs barred with black, and the lower parts of the inner webs are marked with white. The wings reach to the middle of the tail, which is banded with black and ash-colour, and tipped with white. The legs are short and yellow, and the claws black.

SYNONYMS. *Falco gentilis*. Linn.—Gentil Falcon. Latham. Pennant.—Penn. Brit. Zool. vol. i. tab. 21, 22.

under the wing, and both together come tumbling to the ground. If the falconer, however, be not expeditious, the game soon disengages itself and escapes."

THE HEN HARRIER*.

It is about forests, heaths, and other retired places, especially in the neighbourhood of marshy grounds, where they destroy vast numbers of snipes, that these birds are usually seen. They sail with great regularity all over a piece of marsh, till they discover their prey, when they immediately pounce upon and seize it.

A gentleman who was shooting in Hampshire, by chance sprung a pheasant in a wheat-stubble, and shot at it: notwithstanding the report of the gun, it was pursued by a Hen Harrier, but escaped into a covert. He then sprung a second, and a third, in the same field, and these likewise got away; the hawk hovering round him all the while he was beating the field, conscious, no doubt, of the game that lurked in the stubble. Hence we may conclude, that this bird of prey was rendered daring and bold by hunger, and that hawks are not always in a condition to strike their game. We may further observe, that they cannot pounce on their quarry when it is on the ground, where it might be able to make a stout resistance; since so large a fowl as a pheasant could not but be visible to the piercing eye of a hawk, when hovering over it. Hence that propensity

* **DESCRIPTION.** The Hen Harrier is about seventeen inches long, and three feet wide. Its bill is black, and cere yellow. The upper parts of its body are of a blueish gray: and the back of the head, the breast, belly, and thighs are white; the two former marked with dusky streaks. The two middle feathers of the tail are gray, and the outer webs of the others are of the same colour; but the inner ones are marked with alternate bars of white and rust-colour. The legs are long, slender, and yellow; and the claws black.

SYNONYMS. *Falco Cyaneus.* *Linnaeus.*—*L'Oiseau Saint Martin.* *Buffon.*—*Blue Hawk.* *Edwards.*—*Bew. Birds, p. 33.*
—*Penn. Brit. Zool. vol. i. tab. 88.*

in game to cowering and squatting till they are almost trodden on; which, doubtless, was intended by Providence, as a mode of security, though it has long been rendered destructive by the invention of nets and guns.

A Hen Harrier that was shot some years ago near London, was first observed dodging round the lower parts of some old trees, and now and then seeming to strike against the trunks of them with its beak or talons, but still continuing on wing. The cause of this singular conduct could not even be conjectured, till after it was killed; when, on opening its stomach, nearly twenty small brown lizards were found there, which it had artfully seized, by coming suddenly upon them. They were each bitten or torn into two or three pieces.

These destructive birds may be caught by means of a trap, baited with a stuffed rabbit's skin, and covered nicely over with moss. They breed annually on the Cheviot-hills; and from a Hen Harrier and Ring Tail (*Falco pygargus*) having been shot on the same nest, it appears that these are not two distinct species, however different they may be in appearance, but that they are in reality the male and female of the same.

The nest of the Hen Harrier is usually formed near the ground, amongst furze or in thickets. It is constructed of sticks rudely put together, and is nearly flat. The eggs are about four in number, without spots, and of a dirty white colour.

THE SPARROW HAWK*.

The Sparrow Hawk is a bold bird. It is the dread of the farm-yard, for, at times, it makes great havoc.

* DESCRIPTION. The male Sparrow Hawk is about twelve, and the female fifteen, inches in length. The exterior feathers of the upper parts of the latter are brown, with dusky edges; and on the back of the head there are some whitish spots. The under parts are yellowish white, waved with light brown. The chin is streaked with perpendicular lines of brown. The tail is barred with dark brown, and is white at the end. The legs

among young poultry; and it commits its depredations in the most daring manner, even in the presence of mankind. In winter it often makes great havock among the flocks of buntings and finches.

Few of the rapacious birds are so docile and obedient as this. When properly trained it is capable of great attachment; and it is so far susceptible of education, that it may be taught to pursue partridges and other game. It will also pounce upon pigeons when separated from their companions.

The editor of a respectable publication, entitled the *Beauties of Natural History*, states, that when he was a boy he had a Sparrow-hawk that used to accompany him through the fields, catch its game, devour it at leisure, and, after all, find him out wherever he went: nor, after the first or second adventure of this kind, was he ever afraid of losing the bird. A peasant, however, to his great mortification, one day shot it for having made too free with some of his poultry. It was about as large as a wood-pigeon; and this gentleman says he has seen it fly at a turkey-cock; and, when beaten, return to the charge with undaunted intrepidity: he had also known it kill a fowl five or six times as big as itself.

The female builds her nest in hollow trees, on high rocks or lofty ruins; sometimes, however, she is contented with the old nest of a crow. She generally lays four or five eggs.

are yellow, and the claws black.—The male is somewhat different. The upper part of its breast is of a dark lead-colour; the bars on this part are more numerous, and the under parts are altogether darker. In both sexes the bill is blue, and the cere yellow.

SYNONYMS. *Falco Nisus*. *Linnaeus*.—l'Epervier. *Buffon*.—*Bew. Birds*. p. 27.

THE CHAUNTING FALCON*.

During the breeding season the male of this species is remarkable for its song, which it utters every morning and evening, and, like the nightingale, not uncommonly all the night through. It sings in a loud tone for more than a minute, and after an interval begins anew. During its song it is so regardless of its own safety, that any one may approach very near to it: but at other times it is suspicious, and takes flight on the slightest alarm. Should the male be killed, the female also may be shot without difficulty: for her attachment to him is such, that she continues flying round with the most plaintive voice; and, often passing within a few yards of the gunner, it is an easy matter to kill her. But, if the female happen to be shot first, the affection of her mate does not prove so romantic; for, retiring to the top of some distant tree, he is not easily approached: he does not, however, cease to sing, but becomes so wary as, on the least alarm, to fly entirely away from that neighbourhood.

The female forms her nest between the forks of trees, or in bushy groves. She lays four white, round eggs. This Falcon, for its size, is a very destructive species. It preys on partridges, hares, quails, moles, rats, and other small animals.

It is a native of Caffraria, in the South of Africa, and of some of the adjacent countries.

* **DESCRIPTION.** This lately-discovered species is about the size of the Common Falcon. Its plumage is, in general, of a pale lead-colour, with the top of the head and the scapulars inclining to brown. The under parts of the breast are of a pearly gray, crossed with numerous gray stripes. The quills are black. The tail is wedge-shaped, the outer feathers one-third shorter than the middle ones, and the tip white. The bill and claws are black, and the cere and legs orange.

SYNONYMS. *Falco musicus.* *Daudin's Ornith.*—*Le Faucon Chanteur. Le Vaillant.*

OF THE OWLS IN GENERAL*.

Much in the same manner as moths differ from butterflies, do these birds differ from the falcons; the Owls being nocturnal, and pursuing their prey only in the night; and the falcons flying altogether in the day-time. They feed principally on small birds and quadrupeds, and on nocturnal insects: the exuviæ and bones of which (as in the falcons) are always discharged at the mouth, in the form of small pellets. Their eyes are so constructed, that they are able to see much more distinctly in the dusk of the evening than in the broad glare of sunshine. All animals, by the contraction and dilatation of the eye, have, in some degree, the power of shutting out or admitting light, as their necessities require: but in the Owls this property is observed in singular perfection; and, in addition to this, there is an irradiation on the back of the eye, which greatly aids their vision in the obscure places that they frequent.

The head is round, and formed somewhat like that of a cat. About the eyes, the feathers are ranged as if proceeding from a common centre in the middle of the eye; and they extend in a circle to some distance. The legs are clad with down or feathers, even to the origin of the claws, which are very sharp and hooked. Three of the toes stand forward, and one backward; but the fore toes can occasionally be turned back, to suit either for perching or climbing, as occasion may require.

In winter Owls retire into holes in towers and old walls, and pass that season in sleep. The number of species is about *fifty*; of which twenty are furnished with long feathers, surrounding the openings of the

* In this tribe, as in the last, the bill is hooked, but it is not furnished with a cere. The nostrils are oblong, and covered with bristly feathers. The head, ears, and eyes, are very large; the tongue is cleft.

ears, and called, from the appearance they give to the animals, *horns*. In their general modes of life, the Owls may be considered as the cats of the feathered species.

THE GREAT HORNED OR EAGLE OWL*.

Although Owls are superstitiously considered by the inhabitants of most countries as birds of ill omen; yet the Athenians alone, among the ancients, seem to have been free from this popular prejudice, and to have regarded them rather with veneration than abhorrence. The present species, which is common in many parts of Greece, was even considered a favourite bird of Minerva; and at Athens the inhabitants had a proverb, "to send Owls to Athens," which was precisely equivalent to the one used by us, "to send coals to Newcastle."

This Owl is equal in size to some of the eagles: it inhabits inaccessible rocks and desert places, in most parts of Europe, Asia, and America; and is sometimes, though rarely, found in this country. Its eyes are so constructed, that it is able to see much better during the day-time than almost any other of the tribe. It has been frequently observed preying, on its game of birds and small quadrupeds, in full day-light.

M. Cronstedt has recorded a pleasing instance of the attachment of these birds to their offspring. This gentleman resided several years at a farm in Sudermania, near a steep mountain, on the summit of which two

* See Plate vi. Fig. 6.

DESCRIPTION. The body of this Owl is of a tawny red colour, marked with lines and spots, elegantly varied, of black, brown, ash, and rust-colour. The wings are long, and the tail is short, and marked with transverse dusky streaks. The legs are thick, of a brick-dust red colour, and (except in one variety) feathered to the claws, which are large, hooked, and dusky.

SYNONYMS. *Strix bubo.* Linn.—Grand Duc. Buffon.—Great Owl, or Eagle Owl. Willughby.—Great Eared Owl. Latham.—Penn. Brit. Zool. vol. i. tab. 29.

Eagle Owls had their nest. One day in the month of July, a young Owl having quitted the nest, was seized by some of his servants. This bird, after it was caught, was shut up in a large hen-coop; and the next morning M. Cronstedt found a young partridge lying dead before the door of the coop. He immediately concluded that this provision had been brought thither by the parent birds; which he supposed had been making search in the night-time for their lost young-one, and had been led to the place of its confinement by its cry. This proved to have been the case, by the same mark of attention being repeated for fourteen successive nights. The game which the old ones carried to it consisted principally of young partridges, for the most part newly killed, but sometimes a little spoiled. One day a moor-fowl was brought, so fresh, that it was still warm under the wings. A putrid lamb was found, at another time. M. Cronstedt and his servant watched at a window several nights, that they might observe, if possible, when this supply was deposited. Their plan did not succeed: but it appeared that the Owls, which are very sharp-sighted, had discovered the moment when the window was not watched; as food was found to have been deposited before the coop, one night when this had been the case. In the month of August the parents discontinued this attention; but at that period all birds of prey abandon their offspring to their own exertions. From this instance, some idea may be formed of the great quantity of game that must be destroyed by a pair of these Owls, during the time they are employed rearing their young.

It is said that, sometimes, when falconers wish to lure the kite for the purpose of training the falcon, they disfigure an Owl of this species, by fastening to it the tail of a fox. The animal, rendered thus grotesque, is let loose; and he sails slowly along, flying, as he usually does, very low. The poor kite, either curious to observe so strange an animal, or, perhaps inquisitive to know whether it may not be eligible prey, flies after it.

He approaches near, and hovers immediately over it; when the falconer, loosing a strong-winged falcon against him, seizes him at once, and drags him into captivity.

THE WHITE OR SCREECH OWL*.

Incapable of seeing their prey, or even of avoiding danger sufficiently, in the full blaze of day, these birds keep concealed, during this time, in some secure retreat suited to their gloomy habits, and there continue in solitude and silence. If they venture abroad, every thing dazzles and distracts them. Legions of birds flock around them, and single them out as objects of derision and contempt. The black-bird, the thrush, the jay, the bunting, and the redbreast, all come in a crowd, and employ their little arts of insult and abuse. The smallest, the feeblest, and the most contemptible enemies of this bewildered creature are then the foremost to injure and torment him. They increase their cries and turbulence around him, flap him with their wings, and, like cowards, are ready to exhibit their courage when they are sensible that the danger is but small. The unfortunate wanderer, not knowing where he is, whom to attack, or whither to fly, patiently sits and suffers all their indignities with the utmost stupidity. An aversion which the smaller birds bear to the Owl, with a temporary assurance of their own security, urge them to pursue him, whilst they encourage each other, by their mutual cries, to lend assistance in the general

* DESCRIPTION. The plumage of these Owls is very elegant. A circle of soft white feathers surrounds each of the eyes. All the upper parts of the body are of a fine pale yellow colour, variegated with white spots; and the under parts are entirely white. The legs are feathered down to the claws.

SYNONYMS. *Strix Flammea*. *Linnaeus*.—Effrai, ou Frésaisie. *Buffon*.—Common Owl. *Kerr*.—Church Owl, Barn Owl, Howlet, Madge-howlet, Gillihowter. *Willughby*.—Hissing Owl, or Screech Owl. *Montaguc*.—*Bcw. Birds*, p. 51.

cause. Bird-catchers, aware of this singular propensity, having first limed several of the outer branches of a hedge, hide themselves near it, and imitate the cry of an Owl; when instantly all the small birds who hear it flock to the place, in hopes of their accustomed game; but, instead of meeting a stupid and dazzled antagonist, they find themselves ensnared by an artful and unrelenting foe.

This want of sight is compensated by their peculiar quickness of hearing; for the latter sense is much more acute in the Owls than in most other birds.

The White Owl generally quits its hiding place about the time of twilight, and takes a regular circuit round the fields, skimming along the ground in search of its food, which consists chiefly of field-mice and small birds. Like the rest of its tribe, it afterwards emits the bones, feathers, hair, and other indigestible parts, at the mouth, in the form of small pellets. A gentleman, on digging up a decayed pollard-ash that had been frequented by Owls for many generations, found at the bottom many bushels of this kind of refuse. Sometimes these Owls, when they have satisfied their appetite, will, like dogs, hide the remainder of their meat. Mr. Stackhouse, of Pendarvis in Cornwall, informed me, that in his pleasure-grounds he often found shrew-mice lying in the gravel-walk, dead, but with no external wound. He conjectured that they had been struck by the Owls, in mistake for field-mice; and that these birds, afterwards finding their error, in having destroyed animals to which they have a natural antipathy, had left them untouched. This gentleman discovered, by accident, another of the antipathies of White Owls. A pig having been newly killed, he offered a tame Owl a bit of the liver; but nothing, he says, could exceed the contemptuous air with which the bird spurned it from him.

The Mongul and Kalmuck Tartars pay almost divine honours to the White Owl; for they attribute to it the preservation of Jenghis Khan, the founder of their em-

pire. That prince, with a small army, happened to be surprised and put to flight by his enemies. Compelled to seek concealment in a coppice, an Owl settled on the bush under which he was hidden. This circumstance induced his pursuers not to search there, since they supposed it impossible that that bird would perch where any man was concealed. The Prince escaped; and thenceforth his countrymen held the White Owl sacred, and every one wore a plume of feathers of this bird on his head. To this day, the Kalmucs continue the custom on all their great festivals; and some of the tribes have an idol, in the form of an Owl, to which they fasten the real legs of the bird.

The Screech Owl is well known in all parts of England, from the circumstance of its frequenting churches, old houses, and uninhabited buildings; where it continues during the day, and whence, in the evening, it ranges abroad in quest of food. It received its name from the singular cry which it emits during its flight. In its repose it makes a blowing kind of noise, like the snoring of a man. The female forms no nest; but deposits her eggs, generally five or six in number, in the holes of decayed walls, or under the eaves of old buildings. While the young-ones are in the nest, the male and female alternately sally out in quest of food. They are seldom absent more than five minutes, when they return with the prey in their claws; but, as it is necessary to shift it from these into their bill, for the purpose of feeding their young-ones, they always alight to do that before they enter the nest. As the young Owls continue for a great length of time in the nest, and are fed even long after they are able to fly, the old birds have to supply them with many hundreds of mice; on this account they are generally considered useful animals in the destruction of vermin of this description.

THE BROWN OWL

Few of the Owls are more rapacious than these. They reside in woods during the day; but at the approach of evening, when many animals, such as hares, rabbits, and partridges, come out to feed, they begin to be clamorous and active: they destroy such multitudes of small animals, as, on calculation, would appear astonishing. In the dusk of the evening, the Brown Owls approach the farmers' dwellings; and frequently enter the pigeon-houses, where they sometimes commit dreadful ravages. They also kill great numbers of mice, and skin them with as much dexterity as a cook-maid does a rabbit. They seize their prey with great ferocity, and, always beginning at the head, tear it in pieces with much violence. Were they to appear abroad at any time but in the night, when all the poultry are gone to roost, the havoc they would commit in the farm-yard would be prodigious. They do not devour every part of the animals they destroy: the hinder parts they generally leave untouched.

On examining a nest of these Owls that had in it two young-ones, several pieces of rabbits, leverets, and other small animals, were found. The hen and one of the young-ones were taken away; the other was left to entice the cock, which was absent when the nest was discovered. On the following morning there were found in the nest three young rabbits, that had been brought to this young-one by the cock during the night. These birds are occasionally very bold and furious in defence of their young. A carpenter some years ago, passing

* **DESCRIPTION.** The Brown Owl measures somewhat more than a foot in length; and is spotted with black on the head, wings, and back. Its breast is of a pale ash-colour, with dusky, jagged, longitudinal streaks; and the circle round the eyes is ash-coloured, spotted with brown.

SYNONYMS. *Strix ulula.* *Linnaeus.*—Chouette, ou Grand Chevèche. *Buffon.*—Grey Owl. *Pennant.*

through a field near Gloucester, was suddenly attacked by an Owl that had a nest in a tree near the path. It flew at his head; and the man struck at it with a tool that he had in his hand, but missed his blow. The enraged bird repeated the attack; and fastening her talons in his face, lacerated him in a most shocking manner.

When these animals hoot, they inflate their throats to the size of a hen's egg. They breed in hollow trees, or ruined buildings, laying commonly four whitish oval eggs. It is not difficult to catch them in traps; or they may easily be shot in the evenings, by any person who can allure them by imitating the squeaking of a mouse.

Pies*.

OF THE SHRIKES IN GENERAL†.

Although the Shrikes have been arranged by Linnaeus amongst the rapacious birds, yet, with Mr. Pennant and Dr. Latham, I am inclined to place them amongst the *Pies*. If we retain the Shrike in the former order, on account of its chiefly feeding upon animal food, it would be difficult to dispose properly of the

* In all birds of this order the bill is sharp-edged, and convex on its upper surface. The legs are short, tolerably strong, and, in some species, formed for perching; (that is, with three toes forward and one backward;) in others formed for climbing, with two toes forward and two backward; and in others for walking, that is, without any back toe.

† In these birds the bill is strong, straight at the base, and hooked or bent towards the end; and the upper mandible is notched near the tip. The base is not furnished with a cere. The tongue is jagged at the end. The outer toe is connected to the middle one as far as the first joint.

kingfisher, the woodpecker, and some other genera which do the same. If we dwell on the curvature of the bill, how will this agree with the parrots, whose natural food is fruit? And as to the Shrike's living on other birds, whenever opportunity offers, several of the crow and other tribes do the like. Their habits resemble, in a great measure, those of the Pies; as Linnæus has himself acknowledged: and although he has arranged them among the rapacious birds, he seems to consider them as holding a kind of middle place between the Pies and (on account of their smallness) the Passerine order. They seem, however, to stand, with greater propriety, at the head of the Pies; forming there a connecting link between them and the rapacious birds.

They are inhabitants of every quarter of the world; and are found in all climates, except within the Arctic Circle.

THE GREAT OR CINEREUS SHRIKE*.

The muscles which move the bill of this Shrike are very thick and strong; an apparatus that is peculiarly necessary to a species whose mode of killing and devouring its prey is very singular. The Shrike seizes the smaller birds by the throat, and thus strangles them; and it is probably for this reason that the Ger-

* **DESCRIPTION.** The Great Shrike, or Butcher-bird, is a native both of Europe and America; and is, in general, about ten inches in length. Its bill is black, about an inch long, and hooked at the end. The upper parts of the plumage are of a pale ash-colour; and the wings and tail are black, varied with white. The throat, breast, and belly, are of a dirty white; and the legs are black. The female differs very little in appearance from the male.

SYNONYMS. *Lanius Excubitor.* *Linnaeus.*—Pie-grièche grise. *Buffon.*—White Whiskey John. *Phil. Tran.*—Matta-ges, Wierangle, Murdering-bird, Shreek or Shrike, Night Jar, Mountain Magpie, French Pie. *Montague.*—Greater Butcher-bird. *Willughby.*—*Bew. Birds*, p. 51.—*Penn. Brit. Zool. i. tab. 71.*

mans call him by a name signifying "*The suffocating Angel*." When his prey is dead, he fixes it on some thorn; and, thus spitted, tears it to pieces with his bill. Even when confined in a cage, he will often treat his food in much the same manner, by sticking it against the wires before he devours it.

In spring and summer, he imitates the voices of other birds, by way of decoying them within his reach, that he may devour them; excepting this, his natural note is the same throughout all seasons. When kept in a cage, even where he seems perfectly contented, he is always mute.

Mr. Bell, who travelled from Moscow, through Siberia to Pekin, says, that in Russia these birds are often kept tame in the houses. He had one of them given to him, and taught it to perch on a sharpened stick, fixed in the wall of his apartment. Whenever a small bird was let loose in the room, the Shrike would immediately fly from his perch, and seize it by the throat in such a manner as almost in a moment to suffocate it. He would then carry it to his perch, and spit it on the sharpened end, drawing it on, carefully and forcibly, with his bill and claws. If several birds were given him, he would use them all, one after another, in a similar manner. These were so fixed, that they hung by the neck till he had leisure to devour them. This uncommon practice seems necessary to these birds, as an equivalent for the want of strength in their claws to tear their food to pieces. From this they derive their appellation of *Bulcher-birds*.

In America, the Great Shrike has been observed to adopt an odd stratagem, for the apparent purpose of decoying its prey. A gentleman there, accidentally observing that several grasshoppers were stuck upon the sharp thorny branches of the trees, inquired the cause of the phenomenon; and was informed that they were thus spitted by this bird. On further inquiry he was led to suppose, that this was an instinctive stratagem adopted by the Great Shrike, in order to decoy the

smaller birds, which feed on insects, into a situation from which he could dart on and seize them. He is called in America *Nine-killer*, from the supposition that he sticks up nine grasshoppers in succession. That the insects are placed there as food to tempt other birds, is said to appear from their being frequently left untouched for a considerable length of time.

The female forms her nest of heath and moss, and lines it with wool and gossamer. She lays six eggs; which are about as big as those of a thrush, and of a dull olive-green colour, spotted at the end with black. These birds are supposed to live to the age of five or six years; and they are much valued by husbandmen, on the supposition that they destroy rats, mice, and other vermin. They inhabit only mountainous wilds, among furze and unfrequented thickets, and are rarely found in the cultivated parts of our island.

THE TYRANT SHRIKE*.

The dauntless courage of this bird is very remarkable. It is stated that he will pursue, and is able to put to flight, all kinds of birds that approach his station; from the smallest to the largest, none escaping his fury: "nor did I ever see (says Catesby in his account of South Carolina) any that dared to oppose him while flying; for he does not offer to attack them when sitting. I have seen one of them fix on the back of an eagle, and persecute him so, that he has turned on his back, and into various postures in the air, in order to get rid of him; and at last was forced to alight on the

* **DESCRIPTION.** This bird is about the size of a thrush. The bill is of a blackish-brown colour, and furnished with bristles at the base. The upper parts of the plumage are of a lead-colour, the under parts are white, and the breast inclines to ash-colour. The tail is brown, and the legs are dark brown. It is an inhabitant of Carolina.

SYNONYMS. *Lanius Tyrannus.* *Linnaeus.*—Gobe-mouche de la Caroline. *Buffon.*—Carolina Tyrant. *Catesby.*

top of the next tree, from which he dared not move till the little Tyrant was tired, or thought fit to leave him. This is the constant practice of the cock, while the hen is brooding. He sits on the top of a bush, or small tree, not far from her nest, near which, if any small birds approach, he drives them away; but the great ones, as crows, hawks, and eagles, he will not suffer to come within a quarter of a mile of him without attacking them. These birds have only a chattering note, which they utter with great vehemence all the time they are fighting. When their young-ones are flown, they are as peaceable as other birds.

From authority so deservedly great as that of Catesby, we cannot but feel it unpleasant to dissent; but by a letter received by Dr. Latham, from Mr. Abbot of Georgia, observations seem to have been made somewhat different from the above:—"A Tyrant Shrike (he says) having built its nest on the outside of a large lofty pine, I was one day considering how I could procure the eggs; when, viewing the nest, I perceived a crow alight on the branch, break and suck the eggs, and displace the nest, appearing all the while unconcerned, notwithstanding both the cock and hen continued flying at and striking him with their bills all the while; and as soon as the crow had completed the robbery, he departed."

The eggs of this bird are flesh-coloured, and prettily marked at the larger end with dark pink and a few black spots.

OF THE PARROT TRIBE IN GENERAL.*

The Parrots are natives chiefly of tropical regions, where they live, for the most part, on fruit and seeds;

* This most extensive tribe is remarkably distinct from all others. The beak is hooked all the way from the base to the tip, and the upper mandible, or division, is moveable. The nostrils are round; and placed in the base of the bill,

though, when kept in a cage, they will occasionally eat both flesh and fish. They are gregarious, and excessively noisy and clamorous; yet, though they associate in vast multitudes, they live chiefly in pairs of one male and a female. The place they hold among the birds seems to be exactly that which the apes and monkeys occupy among the quadrupeds; for, like these, they are very numerous, imitative, and mischievous. They breed in the hollows of trees, like the owls; and it is said that the male and female sit alternately upon the eggs. In Europe, they have sometimes been known to lay eggs; but they seldom sit upon them in these cool climates.

The toes of Parrots are sufficiently flexible to answer every purpose of hands, for holding their food, or carrying it to their mouths. In climbing, they always use their bill to assist the feet. They are, in general, long-lived.

In a domestic state they are exceedingly docile, and very imitative of sounds; most of the species being able to counterfeit even the human voice, and to articulate words with great distinctness; but their natural voice is a loud, harsh, and unpleasant scream. Alexander the Great is supposed to have been the first who introduced Parrots into Europe.

THE BRASILIAN GREEN MACAW*.

This Macaw, a native of Jamaica, Guiana, and the Brasils, is as beautiful as it is rare; and it is still more

which in some species is furnished with a cere. The tongue is broad and blunt; the head is large, and the crown flat. The legs are short, with two toes placed before and two behind, for the purpose of climbing.

* See *Platc* xiii. *Fig.* 3.

DESCRIPTION. The length of this bird is about seventeen inches. Its bill is black; and, on the cheeks, there is a bare white patch, marked with black lines, in which the eyes are

interesting, from its social and gentle disposition. It soon becomes familiar with persons whom it sees, frequently, and it seems delighted in receiving and returning their caresses. But it has an aversion to strangers, and particularly to children; for it flies at, and sometimes attacks them with great fury.

The Green Macaw is exceedingly jealous: it becomes enraged at seeing a young child sharing its mistress's caresses and favours; it tries to dart at the infant; but, as its flight is short and laborious, it can only exhibit its displeasure by gestures and restless movements, and continues to be tormented by these fits till she leaves the child, and takes the bird on her finger. It is then overjoyed, murmurs satisfaction, and sometimes makes a noise resembling the laugh of an old person. Nor can it bear the company of other Parrots; and if one be lodged in the same room it seems to enjoy no comfort.

* It eats almost every article of human food. It is particularly fond of bread, beef, fried fish, pastry, and sugar. It cracks nuts with its bill, and picks the kernels out dexterously with its claws. It does not chew the soft fruits; but it sucks them by pressing its tongue against the upper part of the beak: and the harder sorts of food, such as bread and pastry, it bruises or chews, by pressing the tip of the lower mandible upon the most hollow part of the upper.

Like all the other Parrots, the Green Macaw uses its claws with great dexterity; its bends forward the hinder toe to lay hold of the fruits and other things which are

placed. The general colour of the plumage is green. The forehead is of a chesnut purple; and the crown is blue, which colour blends itself with the green as it passes backward. On the lower part of the thighs the feathers are red; and the wings are, in different parts, crimson, blue, and black. The tail is green above, near the ends blue, and beneath of a dull red. The legs are brown, and the claws black.

SYNONYMS. *Psittacus Severus*. Linn.—*Ara Verd*. Buffon.—*Maracana*. Willughby.

given it, and to carry them to its bill. The Parrots employ their toes, nearly in the manner as squirrels and monkeys do their fore-paws; they also cling and hang by them. There is another habit common to the Parrots: they never climb or creep without fastening by the bill; with this they begin, and they use their feet only as secondary instruments of motion.

THE GUINEA OR LITTLE RED-HEADED PARROT*.

In size but little larger than the lark, and in brilliancy of plumage exceeded by few of its tribe, this pleasing bird claims our greatest admiration. In a native state it is found amidst the forests of Guinea, and also in Ethiopia, Java, and the East Indies, where immense flocks of them are seen. In these countries they often commit as much devastation amongst the corn and fruit, as sparrows do in Europe.

The trading vessels from these countries seldom fail to bring with them considerable numbers of Guinea Parrots; but they are so tender, that most of them die in their passage to our colder climate. It has also been observed, that the firing of a vessel's great guns is fatal to many of them, which drop down dead from fear. Although very imitative of the manners of other birds, it is a difficult thing to teach them to articulate words. Some have attained this art, but the instances are rare.

They are exceedingly kind and affectionate towards each other; and it is observed that the male generally

* DESCRIPTION. The general colour of the Guinea Parrot is green; its bill, chin, and forehead are red; and the rump is blue.

SYNONYMS. *Psittacus Pullarius*. *Linn.*—Perruche à tête rouge de Guinée; Moineau de Guinée. *Buff.*—Little Red-headed Parrot, or Guinea Sparrow. *Edwards.*—Red-headed Guinea Parrakeet. *Latham.*—Ethiopian Parrot. *Kerr.*

perches on the right side of the female. She seldom attempts to eat before him.

A male and female of this species were lodged together in a large square cage. The vessel which held their food was placed at the bottom. The male usually sat on the same perch with the female, and close beside her. Whenever one descended for food, the other always followed; and when their hunger was satisfied, they returned together to the highest perch of the cage. They passed four years together in this state of confinement; and, from their mutual attentions and satisfaction, it was evident that a strong affection for each other had been excited. At the end of this period the female fell into a state of languor, which had every symptom of old age; her legs swelled, and knots appeared upon them, as if the disease had been of the nature of gout. It was no longer possible for her to descend and take her food as formerly; but the male assiduously brought it to her, carrying it in his bill, and delivering it into hers. He continued to feed her in this manner, with the utmost vigilance, for four months. The infirmities of his mate, however, increased every day; and at length she became no longer able to sit upon the perch: she remained now crouched at the bottom, and from time to time made a few useless efforts to regain the lower perch; while the male, who remained close by her, seconded these feeble attempts with all his power. Sometimes he seized with his bill the upper part of her wing, to try to draw her up to him; sometimes he took hold of her bill, and attempted to raise her up, repeating his efforts for that purpose several times. His countenance, his gestures, his continual solicitude; every thing, in short, indicated, in this affectionate bird, an ardent desire to aid the weakness of his companion, and to alleviate her sufferings. But the scene became still more interesting when the female was at the point of expiring. Her unfortunate partner went round and round her without ceasing; he redoubled his assiduities and his tender cares; he attempted to open her bill, in

order to give her nourishment; his emotion every instant increased; he went to her, and returned with the most agitated air, and with the utmost inquietude: at intervals he uttered the most plaintive cries; at other times, with his eyes fixed upon her, he preserved a sorrowful silence. His faithful companion at length expired: he languished from that time, and survived her only a few months.

THE COMMON ASH-COLOURED PARROT*.

This well-known species is that which is now most commonly brought into Europe. It is superior to most others, both in the facility, and the eagerness with which it imitates the human voice: it listens with attention, and strives to repeat; it dwells constantly on some syllables which it has heard, and seeks to surpass every voice by the loudness of its own. We are often surprised by its repeating words or sounds which were never taught it, and which it could scarcely be supposed to have noticed. It seems to prescribe to itself tasks, and tries every day to retain its lesson. This engages its attention even in sleep; and, according to Marcgrave, it prattles in its dreams. Its memory, if early cultivated, becomes sometimes astonishing. Rho-

* DESCRIPTION. This Parrot is somewhat larger than a pigeon; and, including the tail, measures about twenty inches in length. The bill is black; the cere, and the skin round the eyes, are mealy and white. The plumage is chiefly ash-coloured: the rump and lower part of the belly are hoary, with ash-coloured edges: the feathers on the head, neck, and under parts, are hoary on their edges. The tail is of a bright red colour, having the shafts of the feathers blackish. The legs are ash-coloured, and the claws blackish.

It is a native of Guinea, and of several of the inland parts of Africa.

SYNONYMS. *Psittacus Erithacus*. *Linn.*—Perroquet Cendré, ou Jaco. *Buff.*—Hoary Parrot. *Kerr.*—Ash-coloured, and Red Parrot. *Edwards.*

diginus mentions a Parrot which could recite correctly the whole of the Apostles' Creed.

A Parrot which Colonel O'Kelly bought for a hundred guineas at Bristol, not only repeated a great number of sentences, but answered many questions: it was also able to whistle many tunes. It beat time with all the appearance of science; and so accurate was its judgment, that, if by chance it mistook a note, it would revert to the bar where the mistake was made, correct itself, and still beating regular time, go through the whole with wonderful exactness. Its death was thus announced in the General Evening Post for the ninth of October, 1802: "A few days ago died, in Half-moon-street, Piccadilly, the celebrated Parrot of Colonel O'Kelly. This singular bird sang a number of songs in perfect time and tune. She could express her wants articulately, and give her orders in a manner approaching nearly to rationality. Her age was not known; it was, however, more than thirty years, for previously to that period, Mr. O'Kelly bought her at Bristol for a hundred guineas. The Colonel was repeatedly offered five hundred guineas a-year for the bird, by persons who wished to make a public exhibition of her; but this, out of tenderness to the favourite, he constantly refused. The bird was dissected by Dr. Kennedy and Mr. Brookes; and the muscles of the larynx, which regulate the voice, were found, from the effect of practice, to be uncommonly strong."

The sister of M. de Buffon had a Parrot of this species which would frequently talk to himself, and seem to fancy that some one addressed him. He often asked for his paw, and answered by holding it up. Though he liked to hear the voice of children, he appeared to have an antipathy to them; he pursued them, and bit them till he drew blood. He had also his objects of attachment; and though his choice was not very nice it was constant. He was excessively fond of the cook-maid; followed her every where, sought for, and seldom missed finding her. If she had been some

time out of his sight, the bird climbed with his bill and claws to her shoulders, and lavished on her his caresses. His fondness had all the marks of close and warm friendship. The girl happened to have a sore finger, which was tedious in healing, and so painful as to make her scream. While she uttered her moans, the Parrot never left her chamber. The first thing he did every day, was to pay her a visit; and this tender condolence lasted the whole time of the cure, when he again returned to his former calm and settled attachment. Yet this strong predilection for the girl seems to have been more directed to her office in the kitchen, than to her person; for, when another cook-maid succeeded her, the Parrot showed the same degree of fondness to the new-comer, the very first day.

Parrots not only imitate discourse, but also mimic gestures and actions. Scaliger saw one that performed the dance of the Savoyards, at the same time that it repeated their song. The one last mentioned, was fond of hearing a person sing; and when he saw him dance, he also tried to caper, but with the worst grace imaginable, holding in his toes, and tumbling back in a most clumsy manner.

The society which the Parrot forms with man is, from its use of language, much more intimate and pleasing, than what the monkey can claim from its antic imitation of our gestures and actions. It highly diverts and amuses us; and in solitude it is company: the bird takes part in conversation, it laughs, it breathes tender expressions, or mimics grave discourse; and its words, uttered indiscriminately, please by their incongruity, and sometimes excite surprise by their aptness. Willughby tells us of a Parrot, which, when a person said to it, "Laugh Poll, laugh," laughed accordingly, and the instant after screamed out, "What a fool to make me laugh!" Another, which had grown old with its master, shared with him the infirmities of age. Being accustomed to hear scarcely any thing but the words, "I am sick;" when a person asked it, "How d'ye do,

Poll? how d'ye do?" "I am sick," it replied in a doleful tone, stretching itself along, "I am sick."

Dr. Goldsmith says, that a Parrot belonging to king Henry the Seventh, having been kept in a room next the Thames, in his palace at Westminster, had learned to repeat many sentences from the boatmen and passengers. One day, sporting on its perch, it unluckily fell into the water. The bird had no sooner discovered its situation, than it called out aloud, "A boat! twenty pounds for a boat!" A waterman, happening to be near the place where the Parrot was floating, immediately took it up, and restored it to the king; demanding, as the bird was a favourite, that he should be paid the reward that it had called out. This was refused; but it was agreed that, as the Parrot had offered a reward, the man should again refer to its determination for the sum he was to receive—"Give the knave a groat," the bird screamed aloud, the instant the reference was made.

Mr. Locke, in his Essay on the Human Understanding, has related an anecdote concerning a Parrot, of which, however incredible it may appear, he seems to have had so much evidence, as at least to have believed it himself. The story is this: During the government of Prince Maurice in Brasil, he had heard of an old Parrot that was much celebrated for answering, like a rational creature, many of the common questions that were put to it. So much had been said respecting this bird, that the curiosity of the Prince was roused, and he directed it to be sent for. When he was introduced into the room where the Prince was sitting in company with several Dutchmen, it immediately exclaimed in the Brazilian language, "What a company of white men are here!" They asked it, "Who is that man?" (pointing to the Prince :) the Parrot answered, "Some general or other." When the attendants carried it up to him, he asked it, through the medium of an interpreter, (for he was ignorant of its language,) "From what place do you come?" The Parrot answered,

"From Marignan." The Prince asked, "To whom do you belong?" It answered, "To a Portuguese." He asked again, "What do you do there?" It answered, "I look after chickens!" The Prince, laughing, exclaimed, "You look after chickings!" The Parrot in answer said, "Yes, I; and I know well enough how to do it;" clucking at the same time, in imitation of the noise made by the hen to call together her young-ones.

The females of this species lay their eggs in the hollows of trees; and there is no way of getting at them, except by cutting down and cleaving the trees.

THE YELLOW-WINGED PARROT*.

We know nothing respecting the habits of this bird in a state of nature, but Father Bougot, who had one of them for some time in his possession, communicated to M. de Buffon, the following account of its manners and disposition in a tame state:

"It is (he says) extremely susceptible of attachment to its master; it is fond of him, but requires frequent caresses, and seems disconsolate if neglected, and vindictive if provoked. It has fits of obstinacy; it bites during its ill-humour, and immediately laughs, exulting in its mischief. Correction and rigorous treatment

* **DESCRIPTION.** The length of the Yellow-winged Parrot is about thirteen inches. The bill is whitish, and the cere hoary. The general colour of the body is green; and the feathers on the hind part of the neck and on the back, have black margins. The forehead is of a whitish ash-colour; and the top of the head, cheeks, throat, and fore part of the neck are yellow: the hind head is yellow-green. The thighs and the ridges of the wings are yellow, the remainder of the wings are, in different parts, red, yellow, and green, with the greater quills black. The four middle tail-feathers are green, and yellowish near the end; the others are partly red and partly green. The legs are hoary, and the claws ash-coloured.

It is a native of South America.

SYNONYMS. *Psittacus Ochropterus*. Linn.—Crick à tête et gorge jaune. Buffon.—Yellow-headed Creature. Bancroft.—Yellow-winged Parrot. Latham.

only harden it; gentle usage alone succeeds in mollifying its temper.

“The inclination to gnaw whatever it can reach, is very destructive; it cuts the cloth of the furniture, splits the wood of the chairs, and tears in pieces paper, pens, &c. And if it be removed from the spot where it stands, its proneness to contradiction will instantly hurry it back. But this mischievous disposition is counterbalanced by agreeable qualities, for it remembers readily whatever it is taught to say. Before articulating it claps its wings and plays on its roost: in a cage it becomes dejected, and continues silent; and it never prattles well except when it enjoys its liberty.

“In its cheerful days it is affectionate, receives and returns caresses, and listens and obeys; though a peevish fit often interrupts the harmony. It seems affected by the change of weather, and becomes silent; the way to reanimate it is to sing beside it, and it then strives, by its noisy screams, to surpass the voice which excites it. It is fond of children; in which respect it differs from most other Parrots. It contracts a predilection for some of them, and suffers them to handle and carry it; it caresses them, and will bite ferociously any person who then attempts to touch them. If its favourite children leave it, it is unhappy, follows, and calls loudly after them. During the time of moulting it is much reduced, and seems to endure great pain; and this state lasts for nearly three months.”

The power of imitating exactly articulate discourse, implies in the Parrot a very peculiar and perfect structure of organ; and the accuracy of its memory (though independent of understanding) manifests a closeness of attention, and a strength of mechanical recollection, that no other bird possesses in so high a degree. Accordingly, all naturalists have remarked the singular form of its bill, of its tongue, and its head. Its bill, round on the outside and hollow within, has, in some degree, the capacity of a mouth, and allows the tongue

to play freely: and the sound, striking against the circular border of the lower mandible, is there modified as on a row of teeth, while the concavity of the upper mandible reflects it like a palate; hence the animal does not utter a whistling sound, but a full articulation. The tongue, which modulates all sounds, is proportionably larger than in man; and would be more voluble, were it not harder than flesh, and invested with a strong horny membrane.

From the peculiar structure of the upper mandible of its bill, the Parrot has a power, which no other birds have, of chewing its food. The Parrot seizes its food sideways, and gnaws it deliberately. The lower mandible has little motion, but that from right to left is most perceptible; and this is often performed when the bird is not eating, whence some persons have supposed it to ruminate. In such cases, however, the bird may be only whetting the edge of this mandible, with which it cuts and bites its aliment.

OF THE TOUCANS IN GENERAL.*

These birds are all natives of the hotter parts of South America, where they feed on fruit. They are very noisy, and are generally seen in small flocks of eight or ten in number: they are continually moving from place to place in quest of food, going northward or southward as the fruits ripen. If brought up young they are easily tamed, and, in this state, are very familiar. They breed in the hollows of trees, frequently in places deserted by wood-peckers: and the female lays two eggs. It is probable that they have more than one brood in the year.

* The beaks of all the Toucans are enormously large, and convex; they are bent at the end, hollow, very light, and jagged at the edges. The nostrils are small, round, and situated close to the head. The tongue is long, narrow, and feathered at the edges. The feet are adapted for climbing, and have the toes placed two forward and two backward.

THE RED-BELLIED TOUCAN

In several parts of South America these birds have the name of Preacher Toucan; from the circumstance of one of the flock being always perched at the top of a tree, above its companions, while they are asleep. This makes a continual noise, resembling ill-articulated sounds, moving its head during the whole time to the right and left, in order, it is said, to deter birds of prey from seizing on them.

They feed chiefly on fruits. The females build their nests in the holes of trees; and no bird better secures its offspring from external injury than this. It has not only birds, men, and serpents to guard against; but a numerous train of monkeys, which are more prying, mischievous, and hungry, than all the rest. The Toucan, however, sits in its hole, defending the entrance with its great beak; and if the monkey ventures to offer a visit of curiosity, the Toucan gives him such a welcome, that he is soon glad to escape †.

* See Plate xiii. Fig. 1.

DESCRIPTION. This Toucan, which is a native of Guiana and Brazil, is about twenty inches in length. The bill is six inches long, and nearly two inches thick at the base; it is of a yellowish green colour, reddish at the tip. The nostrils are at the base of the bill; but are not, as in some of the species, covered with feathers. The principal upper parts of the body, and the throat and neck, are of a glossy black, with a tinge of green; the lower part of the back, the rump, upper part of the tail, and small feathers of the wings, are the same, with a cast of ash-colour. The breast is orange-colour. The belly, sides, thighs, and the short feathers of the tail, are bright red: the remainder of the tail is of a greenish black, tipped with red. The legs and claws are black.

SYNONYMS. *Ramphastus Picatus.* *Linnaeus.*—Toucan à Ventre rouge. *Buffon.*—Preacher Toucan. *Latham.*—Toucan, or Brazilian Pye. *Will.*

† There appears to be some doubt as to the real strength of the beak of the Toucan. This assertion of M. de Buffon seems

The Red-bellied Toucans are easily tamed, and, in that state, they will eat of almost any thing that is offered to them. Pozzo, who bred up one of these birds, and had it perfectly domesticated, informs us, that it leaped up and down, wagged its tail, and cried with a voice resembling that of a magpie. It fed upon the same things as Parrots; but was most greedy of grapes. These being plucked off one by one, and thrown to it, it would with great dexterity catch in the air before they fell to the ground. Its bill, he adds, was hollow, and on that account very light, so that the bird had but little strength in this apparently formidable weapon; nor could it peck or strike smartly with it. But its tongue seemed to assist the efforts of this unwieldy machine: it was long, thin, and flat, not much unlike one of the feathers on the neck of a dung-hill-cock; this the bird moved up and down, and often extended five or six inches from the bill. It was of a flesh-colour, and remarkably fringed on each side with small filaments.

It is probable that this long tongue has greater strength than the thin hollow beak that contains it; and that the beak is only a kind of sheath for this peculiar instrument, used by the Toucan in making its nest, and in obtaining its provision.

These birds are stated to be in great request in South America; both on account of the delicacy of their flesh, and the beauty of their plumage, particularly the feathers of the breast. The skin of this part the Indians pluck off, and, when dry, glue to their cheeks:

to contradict what he has before said of the weakness of this enormous and apparently disproportionate member. Willughby, p. 129, says, that, notwithstanding its extreme lightness, "it is of a bony substance; and therefore it is not to be wondered that, dexterously used, it should by many strokes pierce a tree; the bird having, perchance, the instinct to choose a rotten one." It is from this writer that Buffon has derived the latter part of the above account.

they consider these feathers an irresistible addition to their beauty.

OF THE HORNBILLS IN GENERAL*.

The animals of this, as well as of the last tribe, have all singularly disproportioned bills. Those of the Hornbills are bent, jagged at the edges, and have frequently on the upper mandible, a protuberance, somewhat resembling another bill.

These birds seem to hold the same place on the old continent, as the toucans do on the new; and probably they subsist on similar food.

THE MALABAR HORNBILL †.

In a wild state these extraordinary birds inhabit the

* The nostrils of these birds are small, round, and situated behind the base of the bill. The tongue is small and short. The legs are scaly: the toes placed three forward, and one backward; the middle toe is connected to the outermost, as far as the third joint, and to the innermost, as far as the first.

† DESCRIPTION. This bird is about two feet six inches long, and in bulk somewhat bigger than a crow. The bill is more than five inches in length, having on its upper part a protuberance rounded at the top, reaching two thirds of its length, and tending to a sharp edge in front: this extends beyond the eyes, and in the fore part is black. The base and edges of both mandibles, as well as a small portion of the upper part, are also black: the general colour of both of these is a dingy yellow. The plumage is in general black, some of the feathers inclining, on their margins, to green; but the lower part of the breast, the belly, and the thighs, and the tip of the wings and tail, (except one outer feather in each of the former, and the two middle feathers in the latter, which are coloured like the rest of the body,) are black. The legs are black, and very short.

SYNONYMS. *Buceros Malabaricus*. Linn.—Calao de Malabar. Buff.—Pied Hornbill. Latham.—Latham's *Synopsis*, vol. i. tab. 2.

great woods of Malabar and the East Indies, where they usually roost on the highest and most inaccessible trees, and, in preference, upon the dead and withered branches. The females form their nests in the worm-eaten holes of the trunk, and generally lay four or five dingy white eggs. The young-ones, when first produced, are completely naked, and, for some time, the protuberance on their bill is not more than two or three lines in depth. This, by degrees, increases, but does not attain its full growth until the birds are two years old: their plumage then assumes its proper colours.

The protuberance upon the bill is frequently observed to be injured by the use to which the birds apply it, in beating the branches of trees for the purpose of detaching the bark, in order to discover insects, and even small lizards, which take refuge there, and on which they feed.

In the island of Ceylon these birds are in great request by the inhabitants, who carefully rear them in a domestic state, from their propensity to chase and devour mice and other vermin, of which they clear the houses with as much address as cats.

One of these birds, which was brought into England some years ago, exhibited several interesting peculiarities in its manners. It would leap forward, or sideways, with both legs at once, like a magpie or jay, and never walked. Its general air was rather stupid and dull; though, when agitated, it would sometimes put on a fierce look. It would eat lettuce, and some other esculent vegetables, after bruising them with its bill; it would also devour rats, mice, small birds, or raw flesh. It had different tones of voice on different occasions: sometimes a hoarse sound in the throat, like *ouck, ouck*; at other times a hoarse and weak noise, not unlike the clucking of a turkey-hen. It used to display its wings, and enjoy itself in the sunshine; but it shivered in the cold. At the approach of winter it died, unable to bear the severity of our

climate, so different to its nature from that which it had left.

THE AFRICAN HORNBILL*, AND RHINOCEROS
HORNBILL.

The former of these species are found in various parts of Africa, but are not common near the sea-coasts. The females build in large, thick trees, and form a covered nest, like that of a magpie, but three or four times as large. This is placed firmly on the trunk, and the entrance to it is always on the east side. They sometimes have as many as eighteen young-ones.

These birds, in general, only run along the ground; but, being of a distrustful disposition, they are soon raised by alarm, when they usually fly to a great distance, before they again alight. Their food consists principally of insects and lizards. The male and female are always to be seen in company; or sometimes there are two females to one male, but never more. The Negroes esteem this Hornbill sacred, never killing it themselves, and always, if possible, preventing the Europeans from firing at it. They have a superstition that the death of one of these birds gives cold to the whole district. M. Geoffroy, who examined several of them, was observed to kill one:

* DESCRIPTION. The length of the African Hornbill is nearly four feet. Its bill is about ten inches long, and the horny protuberance upon it appears as if cut, with an aperture somewhat resembling the form of a club on cards, or an iron lance. This excrescence is of the same substance as the bill, but thinner, and yields to pressure. The aperture is about an inch long, and half an inch wide, having on the inside a black membrane, of use in preventing the introduction of any foreign body into the horn, which communicates interiorly with the head. The general colour of the plumage is a sooty black; some of the large feathers of the wings are, however, perfectly white.

SYNONYMS. *Buceros Africanus*. *Linn.*—Brac ou Calao d'Afrique. *Buffon*.—African Hornbill. *Latham*.

they reproached him with the utmost severity, and every one present put his nose to the excrescence on the bill, in order to secure himself from the injurious consequences which he imagined would attend its death.

The *Rhinoceros Hornbills**, which are found in Sumatra and several other parts of the east, feed on flesh and carrion. They are said to follow the hunters, for the purpose of feeding on the entrails of the beasts that are killed. We are told also that they chase rats and mice, and, after pressing them flat with their bill, in a peculiar manner, toss them up into the air, and swallow them whole immediately on their descent.

OF THE CROW TRIBE IN GENERAL†.

Few animals are more generally dispersed over the world than the different species of Crow; some of them being found in almost every climate. They are prolific, clamorous, and usually associate in flocks. Most of them make their nests in trees, and the number of

* See Plate xii. Fig. 3.

DESCRIPTION. The protuberance of the beak of the *Rhinoceros Hornbill* is so large, and so much recurved, as to appear rather an enormous deformity, than a natural production. This bird is somewhat smaller than a turkey, and of a black colour, except the tail, which is white, and marked with a bar of black. The beak is nearly a foot long, and of a pale yellow colour.

SYNONYMS. *Buceros Rhinoceros. Linnaeus.*—Calao *Rhinoceros. Buffon.*—*Rhinoceros Bird, or Horned Indian Raven. Willughby.*—Great Hornbill. *Shaw's Nat. Mis.*

† These birds have a strong bill; with the upper mandible a little bent, the edges sharp, and, in general, a small notch near the tip. The nostrils are covered with bristles reflected over them; and the tongue is divided at the end. The toes are placed three forward, and one backward; and the middle toe is united to the outer one as far as the first joint.

young-ones which they produce is five or six. They feed promiscuously on animal and vegetable substances. Some of the species, when in great numbers, are supposed to be injurious to man, by devouring grain; but they make amends for this injury, by the immense quantities of noxious insects and other vermin which they destroy.

Among the ancients the Raven was esteemed a bird of much importance in augury; and the various changes and modulations of its voice were studied with the greatest attention, and were too often used by designing men to mislead the unwary.

It frequents the neighbourhood of great towns; where it is useful in devouring carrion and filth, which it scents at a vast distance. It is a cunning bird, and generally careful in keeping beyond the reach of a gun.

When brought up young, the Raven becomes very familiar; and, in a domestic state, he possesses many qualities that render him highly amusing. Busy, inquisitive, and impudent, he goes every where, affronts and drives off the dogs, plays his tricks on the poultry, and is particularly assiduous in cultivating the goodwill of the cook-maid, who is generally his favourite in the family. But, with these amusing qualities, he often also has the vices and defects of a favourite. He is a glutton by nature, and a thief by habit. He does not confine himself to petty depredations on the pantry or the larder; he aims at more magnificent plunder—at spoils which he can neither exhibit nor enjoy, but which, like a miser, he rests satisfied with having the satisfaction of sometimes visiting and contemplating in secret.

* SYNONYMS. *Corvus Corax*. Linn.—Corbeau. Buffon.—*Bew. Birds.* p. 66.

A piece of money, a tea-spoon, or a ring, is always a tempting bait to his avarice: these he will silyly seize upon, and, if not watched, will carry to some hiding-place.

Mr. Montagu was informed by a gentleman, that his butler, having missed many silver spoons, and other articles, without being able to account for the mode in which they disappeared, at last observed a tame Raven that was kept about the house, with one in his mouth, and, on watching him to his hiding-place, discovered there upwards of a dozen more.

Notwithstanding the injury these birds do to the farmer, a popular respect is paid to them, from their having been the birds that fed the prophet Elijah in the wilderness. This prepossession in favour of the Raven is of a very ancient date: the Romans, who thought the bird ominous, paid to it, from motives of fear, the most profound veneration.

A Raven, as Pliny informs us, that had been kept in the Temple of Castor, flew down into the shop of a tailor, who was highly delighted with its visits. He taught the bird several tricks; but particularly to pronounce the names of the emperor Tiberius, and of the whole royal family. The tailor was beginning to grow rich, by those who came to see this wonderful Raven; till an envious neighbour, displeased at his success, killed the bird, and deprived the tailor of all his hopes of future fortune. The Romans, however, thought it necessary to take the poor tailor's part; they accordingly punished the man who offered the injury, and gave to the Raven all the honours of a splendid interment.

The female builds her nest early in the spring, in trees and the holes of rocks; in which she lays five or six blueish-green eggs, spotted with brown. She sits about twenty days: during which time she is constantly attended by the male, who not only furnishes her with abundance of food, but also, whenever she leaves the nest, takes her place.

Of the perseverance of the Raven in the act of incubation, Mr. White has related the following singular anecdote:—In the centre of a grove near Selborne, there stood an oak, which, though on the whole shapely and tall, bulged out into a large excrescence near the middle of the stem. On this tree a pair of Ravens had fixed their residence for such a series of years, that the oak was distinguished by the title of “The Raven-tree.” Many were the attempts of the neighbouring youths to get at this nest: the difficulty whetted their inclinations, and each was ambitious of surmounting the arduous task; but, when they arrived at the swelling, it juttet out so in their way, and was so far beyond their grasp, that the boldest lads were deterred, and acknowledged the undertaking to be too hazardous. Thus the Ravens continued to build, nest upon nest, in perfect security, till the fatal day on which the wood was to be levelled. This was in the month of February, when those birds usually sit. The saw was applied to the trunk, the wedges were inserted into the opening, the woods echoed to the heavy blows of the beetle or mallet, the tree nodded to its fall; but still the dam persisted in sitting. At last, when it gave way, the bird was flung from her nest; and, though her parental affection deserved a better fate, was whipped down by the twigs, which brought her dead to the ground.

The Raven feeds chiefly on small animals; and is said to destroy rabbits, young ducks, and chickens; and sometimes even lambs, when they happen to be dropped in a weak state. In the northern regions, it preys in concert with the white bear, the Arctic fox, and the eagle: it devours the eggs of other birds, and eats shore-fish, and shell-fish; with the latter it soars into the air, and it drops them from on high to break the shells, and thus to get at the contents. Willughby says, that Ravens may be trained to fowling like hawks.

The faculty of scent in these birds must be very acute; for in the coldest of the winter-days, at Hud-

son's Bay, when every kind of effluvia is almost instantaneously destroyed by the frost, buffaloes and other beasts have been killed where not one of these birds was seen; but, in a few hours, scores of them have been found collected about the spot, to pick up the blood and offal.

THE CARRION OR COMMON CROW*.

These birds live chiefly in pairs, in the woods, where they build their nests on the trees. The female lays five or six eggs, much like those of the raven; and, while sitting, is always fed by the male. They feed on putrid flesh of all sorts; as well as on worms, insects, and various kinds of grain. Like the ravens, they sometimes pick out the eyes of lambs when just dropped. They also do much mischief in rabbit-warrens, by killing and devouring the young rabbits; and chickens and young ducks do not always escape their attacks.

Mr. Montagu states, that he once saw a Crow in pursuit of a pigeon, at which it made several pounces like a hawk; but the pigeon escaped by flying in at the door of a house. He saw another strike a pigeon dead from the top of a barn. It is so bold a bird, that neither the kite, the buzzard, nor the raven, approaches its nest without being driven away. When it has young-ones it will even insult the peregrine falcon, and at a single pounce will bring that bird to the ground.

When poultry-hens lay their eggs in hedge-bottoms or stack-yards, Crows are often caught in the act of devouring them. On the northern coast of Ireland, a friend of Dr. Darwin saw above a hundred crows at once preying upon muscles: each crow took a muscle

* SYNONYMS. *CORVUS CORONE*. *Linnaeus*.—Corbine ou Corneille noir. *Buffon*.—*Penn. Brit. Zool. vol. i. tab. 34.*

up into the air twenty or thirty yards high, and let it fall on the stones, and thus, by breaking the shell, got possession of the animal. It is related that a certain ancient philosopher, walking along the sea-shore to gather shells, one of these unlucky birds mistaking his bald head for a stone, dropped a shell-fish upon it, and killed at once a philosopher and an oyster.

The familiarity and audacity of the Crows in some parts of the East is astonishing. They frequent the courts of houses belonging to the Europeans; and, as the servants are carrying in dinner, will alight on the dishes, and fly away with the meat, if not driven off by persons who attend with sticks for that purpose.

In some parts of North America they are extremely numerous, and destroy the new-sown maize by pulling it out of the ground and devouring it. The ripening plants they also injure, by picking holes in the leaves which surround the ears, and thus exposing them to corruption by letting in the rain. The inhabitants of Pennsylvania and New Jersey allowed a reward of three-pence or four-pence a-head for destroying these birds: but the law was soon repealed, on account of the expense which it brought upon the public treasury.

There are at present more of these birds bred in England than in any other country of Europe. In the reign of Henry the Eighth, Crows had become so numerous, and were thought so prejudicial to the farmer, that they were considered an evil worthy of parliamentary redress; and an act was passed for their destruction, in which also rooks and choughs were included. Every hamlet was ordered to destroy a certain number of Crows' nest for ten successive years; and the inhabitants were compelled to assemble at stated times during that period, in order to consult on the most proper and effectual means of extirpating them.

The following are modes adopted in some countries for catching these birds:—A Crow is fastened alive on its back firmly to the ground, by means of a brace on

each side, at the base of the wings. In this painful position the animal struggles and screams; the rest of its species flock to its cries from all quarters, with the intention, probably, of affording relief. But the prisoner, to extricate himself, grasping at every thing within reach, seizes with his bill and claws, which are left at liberty, all that come near him, and thus delivers them a prey to the bird-catcher. Crows are also caught by cones of paper baited with raw flesh; as the Crow introduces his head to devour the bait, which is near the bottom, the paper, being besmeared with bird-lime, sticks to the feathers of the neck, and he remains hooded. Unable to get rid of this bandage, which entirely covers his eyes, the Crow rises almost perpendicularly into the air, the better to avoid striking against any object; till, quite exhausted, he sinks down near the spot from which he mounted.

If a Crow be put into a cage, and exposed in the fields, his calls generally attract the attention of others that are in the neighbourhood, which flock round their imprisoned companion. This plan is sometimes adopted in order to get these birds within gun-shot; for, however shy they may otherwise be, their care is said in this case to be so much occupied on their friend, as to render them almost heedless of the gunner's approach.

Willughby states, that this bird is capable of being taught to articulate words with considerable distinctness. By the ancients it was esteemed a bird of bad omen. The Crow is so rare in Sweden, that Linnæus speaks of it as a bird that he never knew killed in that country but once.

THE ROOK

Besides insects, the Rooks feed on different kinds of

• DESCRIPTION. The Rook is about the size of the carrion

grain, thus causing some inconvenience to the farmer; but this seems greatly repaid by the good they do to him, in extirpating the maggots of some of the most destructive insects of the beetle tribe. In Suffolk, and in some parts of Norfolk, the farmers find it their interest to encourage the breed of Rooks, as the only means of freeing their grounds from the grub which produces the cockchafer, and which in this state destroys the roots of corn and grass to such a degree, "that (says Mr. Stillingfleet, one of the most accurate observers of nature which this country ever produced) I have myself seen a piece of pasture-land where you might turn up the turf with your foot." An intelligent farmer in Berkshire informed this gentleman that one year, while his men were hoeing a field of turnips, a great number of Rooks alighted in a part of it where they were not at work. The consequence was a remarkably fine crop in this part, while in the remainder of the field there were scarcely any turnips that year.

These birds are gregarious, being sometimes seen in flocks so great as to darken the air in their flight. They build their nests on high trees, close to each other; generally selecting a large clump of the tallest trees for this purpose. When once settled, they every year frequent the same place. Rooks are, however, bad neighbours to each other; for they are continually fighting and pulling to pieces each other's nests. These proceedings seem unfavourable to their living in such close community: and yet, if a pair offer to build on a separate tree, the nest is plundered and demolished at once. Some unhappy couples are not permitted to finish any nest till the rest have all completed their buildings;

crow, but its plumage is more glossy. It also differs in having its nostrils and the root of the bill naked: in the crow, these are covered with bristly hair. This difference arises from the Rook's thrusting its bill continually into the earth, in search of worms and other food.

SYNONYMS. *Corvus Frugilegus.* Linn.—Freux, ou la Fravonne.—Buff.—Bew. *Birds*, p. 71.

for as soon as they arrange a few sticks together, a party comes and demolishes the fabric. It generally happens that one of the pair is stationed to keep guard, while the other goes abroad for materials. From their conduct in these circumstances our cant-word *rooking*, for cheating, originated.

As soon as the Rooks have finished their nests, and before they lay, the cock birds begin to feed the hens. These receive the bounty of their mates with a fondling, tremulous voice, and fluttering wings, and with all the little blandishments that are expressed by the young while in a helpless state. This gallant deportment of the males is continued through the whole season of incubation.

New-comers are often severely beaten by the old inhabitants, (who are not fond of intrusions from other societies,) and are even frequently driven quite away. Of this an instance occurred neared Newcastle, in the year 1783. A pair of Rooks, after an unsuccessful attempt to establish themselves in a rookery at no great distance from the Exchange, were compelled to abandon the attempt, and take refuge on the spire of that building; and, though constantly interrupted by other Rooks, they built their nest on the *top of the vane*, and reared their young-ones undisturbed by the noise of the populace below them:—the nest and its inhabitants were of course turned about by every change of the wind. They returned and built their nest every year on the same place, till the year 1793, soon after which the spire was taken down. A small copper-plate was engraved, of the size of a watch-paper, with a representation of the top of the spire and the nest; and so much pleased were the inhabitants and other persons with it, that as many copies were sold as produced to the engraver the sum of ten pounds.

A remarkable circumstance respecting these birds occurred a few years ago at Dallam Tower, in Westmorland, the seat of Daniel Wilson, Esq. There were two groves adjoining to the park, one of which had,

for many years, been the resort of a number of herons, that regularly every year built and bred there. In the other was a large rookery. For a long time the two tribes lived peaceably together. At length, in the spring of 1775, the trees of the heronry were cut down, and the young brood perished by the fall of the timber. The parent birds, not willing to be driven from the place, endeavoured to effect a settlement in the rookery. The Rooks made an obstinate resistance; but, after a desperate contest, in the course of which many of the Rooks and some of the herons lost their lives, the latter at length succeeded in obtaining possession of some of the trees, and that very spring built their nests afresh. The next season a similar conflict took place; which, like the former, was terminated by the victory of the herons. Since this time, peace seems to have been agreed upon between them: the Rooks have relinquished part of the grove to the herons, to which part alone they confine themselves; and the two communities appear to live together in as much harmony as they did before the dispute.

The following anecdote of this sagacious community is related by Dr. Percival, in his Dissertations: "A large colony of Rooks had subsisted many years in a grove on the banks of the river Irwell, near Manchester. One serene evening I placed myself within the view of it, and marked with attention the various labours, pastimes, and evolutions of this crowded society. The idle members amused themselves with chasing each other through endless mazes; and, in their flight, they made the air sound with an infinitude of discordant noises. In the midst of these playful exertions, it unfortunately happened that one Rook, by a sudden turn, struck his beak against the wing of another. The sufferer instantly fell into the river. A general cry of distress ensued. The birds hovered, with every expression of anxiety, over their distressed companion. Animated by their sympathy, and, perhaps, by the language of counsel known to themselves,

he sprang into the air, and by one strong effort, reached the point of a rock which projected into the water. The joy became loud and universal; but, alas! it was soon changed into notes of lamentation; for the poor wounded bird, in attempting to fly towards his nest, again dropped into the river, and was drowned, amidst the moans of his whole fraternity."

There seems to exist a wonderful antipathy between these birds and the Raven. Mr. Markwick says, that in the year 1778, as soon as a raven had built her nest in a tree adjoining a very numerous rookery, all the Rooks immediately left the spot, and did not return to build there afterwards. At the bishop of Chester's rookery at Broomham, near Hastings, upon a raven's building her nest in one of the trees, all the Rooks forsook the spot; they however returned to their haunts in the autumn, and formed their nests there the succeeding year. It is no very difficult task to account for this antipathy. The raven will scarcely suffer any bird to come within a quarter of a mile of its nest, being very fierce in defending it. It besides seizes the young Rooks from their nests, to feed its own offspring. This Mr. Lambert was an eye-witness to, at Mr. Seymour's at Harford, in Dorsetshire; for there was no peace in the rookery night nor day, till one of the old ravens was killed, and the nest was destroyed.

Rooks begin to build in March; and, after the breeding-season is over, they forsake their nesting-trees, and for some time roost elsewhere; but they have always been observed to return in August. In October they repair their nests.

When the first brood of Rooks are sufficiently fledged, they leave their nest-trees in the day-time, and resort to some distant place in search of food: but they return regularly every evening in vast flights, to their nests; where, after flying round several times with much noise and clamour, till they are all assembled together, they take up their abode for the night.

Mr. White, in his Natural History of Selborne, speak-

ing of the evening exercises of Rooks in the autumn, remarks, that, just before dusk, they return in long strings from the foraging of the day, and rendezvous by thousands over Selborne Down, where they wheel round, and dive in a playful manner in the air, exerting their voices, which being softened by the distance, become a pleasing murmur, not unlike the cry of a pack of hounds in deep echoing woods. When this ceremony is over, with the last gleam of light they retire to the deep beech-woods of Tisted and Kempley. We remember (says Mr. White) a little girl, who, as she was going to bed, used to remark, on such an occurrence, in the true spirit of physico-theology, that the Rooks were saying their prayers; and yet this child was much too young to be aware that the Scriptures have asserted of the Deity—that “*He feedeth the Ravens, who call upon him.*”

In the parts of Hampshire adjacent to the New Forest, when the Rook has reared his progeny, and has carried off such of them as have escaped the arts of men and boys, he retires every evening at a late hour, during the autumn and winter months, to the closest coverts of the forest, after having spent the day in the open fields and enclosures, in quest of food.

Among all the sounds of animal nature, few are more grateful than the cawing of Rooks. The Rook has but two or three notes, and when he attempts a *solo* we cannot praise his song; but when he performs in *concert*, which is his chief delight, these notes, although rough in themselves, being intermixed with those of the multitude, have, as it were, all their rough edges worn off, and become harmonious, especially when softened in the air, where the bird chiefly performs. We have this music in perfection, when the whole colony is raised by the discharge of a gun.

Dr. Darwin has remarked, that a consciousness of danger from mankind is much more apparent in Rooks than in most other birds. Any one who has in the

least attended to them, will see that they evidently distinguish that the danger is greater when a man is armed with a gun, than when he has no weapon with him. In the spring of the year, if a person happen to walk under a rookery with a gun in his hand, the inhabitants of the trees rise on their wings, and scream to the unfledged young to shrink into their nests from the sight of the enemy. The country-people, observing this circumstance so uniformly to occur, assert that Rooks can smell gunpowder.

In England these birds remain during the whole year; but both in France and Silesia they migrate.

THE JACKDAW*.

Jackdaws are common birds in England, where they remain during the whole year; but in some parts of the Continent they are migratory.

They frequent old towers and ruins in great flocks, where they construct their nests; and they have been sometimes known to build in hollow trees, near a rookery, and to join the rooks in their foraging parties. In some parts of Hampshire, from the great scarcity of towers or steeples, they are obliged to form their nests underground, in the rabbit-holes; they also build in the interstices between the upright and cross stones of Stonehenge, far out of the reach of the shepherd-boys, who are always idling about that place. In the Isle of Ely, from the want of ruined edifices, they often build their nests in chimneys. In the grate below one of these nests, which had not been used for some time, a fire was lighted; the materials of the nest caught fire, and they were in such quantity, that it was with great difficulty the house could be preserved from the flames.

These birds feed principally on worms, and the grubs

* **SYNONYMS.** *Corvus Monedula*. Linn.—Choucas. Buffon.
—Bew. *Birds*, p. 73.—Penn. *Brit. Zool.* vol. i. tab. 34.

of insects; but I was once witness to a singular deviation from their usual mode in this respect. I was walking with a friend in the Inner Temple garden, about the middle of May, 1802, when we observed a Jackdaw hovering, in a very unusual manner, over the Thames. A small barrel was floating near the place, a buoy to a net that some fishermen were hauling; and we at first thought the bird was about to alight upon it. This, however, proved a mistake; for he descended to the surface of the water, and fluttered for a few seconds with his bill and feet immersed; he then rose, flew to a little distance, and again did the same; after which he made a short circuit, and alighted on a barge, about fifty yards from the garden, where he devoured a small fish. When this was done, he made a third attempt, caught another, and flew off with it in his mouth.

Jackdaws are easily tamed; and may, with a little difficulty, be taught to pronounce several words. They conceal such parts of their food as they cannot eat; and often along with it, small pieces of money or toys, frequently occasioning, for the moment, suspicions of theft in persons who are innocent. They may be fed on insects, fruit, grain, and small pieces of meat.

In Switzerland there is found a variety of the Jackdaw which has a white ring round its neck. In Norway, and other cold countries, Jackdaws have been seen entirely white.

THE JAY*.

This beautiful bird is well known in our woods; it builds, in trees, an artless nest, of sticks, fibres, and twigs, in which it lays five or six eggs. Its delicate cinnamon-coloured back and breast, with blue wing-coverts, barred with black and white, render it one of the most elegant birds produced in these islands. Its

* SYNONYMS. *Corvus Glandarius*. Linn.—Geai. Buffon.—*Bew. Birds*. p. 80.

bill is black, and chin white; and, on its forehead, there is a beautiful tuft of white feathers, streaked with black, which it has the power of erecting at pleasure. Its voice is harsh, grating, and unpleasant.

When kept in a domestic state, the Jay may be rendered familiar, and it will catch and repeat a variety of sounds. One of these birds has been heard to imitate so exactly the noise made by the action of a saw, as to induce passengers to suppose that a carpenter was at work in the house.

A Jay kept by a person in the north of England, had learned at the approach of cattle, to set a cur-dog upon them, by whistling and calling him by his name. One winter, during a severe frost, the dog was by this means excited to attack a cow that was big with calf; when the poor animal fell on the ice, and was much hurt. The Jay was complained of as a nuisance, and its owner was obliged to destroy it.

The young Jays continue with the old ones till the next pairing time; they then choose each its mate, and separate, in order to produce a new progeny. The old birds, when enticing their fledged young-ones to follow them, make a noise not unlike the mewling of a cat.

These birds feed in general on acorns, nuts, seeds, and fruit; and in summer they are often found injurious to gardens, from their devouring peas and cherries. Mr. Wallis, in his *Natural History of Northumberland*, says, "They come two or three together out of the wood into my little garden at Simonburn, in the raspberry and gooseberry season, and can hardly be frightened away; in loud clamours, from tree to tree, proclaiming it (as it were) to be their own property."

THE MAGPIE*.

Like the crow, this bird feeds on almost all substances, animal as well as vegetable, that come in its

* **SYNONYMS.** *Corvus Pica.* Linnæus.—*Pic. Buff.*—Pianet. *Willughby.*—*Bew. Birds*, p. 75.

way. It forms its nest with great art: leaving a hole in the side for admittance, and covering the whole upper part with a texture of thorny branches closely entangled, by which a retreat is secured from the rude attacks of other birds; the inside is furnished with a sort of mattress, composed of wool and other soft materials, on which the young-ones, which are generally seven or eight in number, repose.

It is a crafty, and, in a tame state, a familiar bird; and may be taught to pronounce not only words, but short sentences, and even to imitate any particular noise that it hears.

Plutarch relates a singular story of a Magpie belonging to a barber at Rome. This bird could imitate, to a wonderful extent, almost every noise that it heard. Some trumpets happened one day to be sounded before the shop; and for a day or two afterwards the Magpie was quite mute, and seemed pensive and melancholy. This surprised all who knew it; and they supposed that the sound of the trumpets had so stunned the bird, as to deprive it at the same time both of voice and hearing. This, however, was not the case; for, says this writer, the bird had ~~been~~ all the time occupied in profound meditation, and was studying how to imitate the sound of the trumpets: accordingly, in the first attempt, it perfectly imitated all their repetitions, stops, and changes. This new lesson, however, made it entirely forget every thing that it had learned before.

In certain districts of Norway, the Magpie is so uncommon a bird, that its appearance is considered a sign of the approaching death of some principal person in the neighbourhood. In our country also it is esteemed a bird of omen. In the north of England, if one of these birds be observed flying by itself, it is accounted by the common people to be a sign of ill luck: if there be two together, they forebode something fortunate: three indicate a funeral: and four a wedding.

Like the other birds of its tribe, the Magpie is ad-

dicted to stealing; and, when it is satiated, will hoard up its provisions. It frequently commits ravages in rabbit-warrens and poultry-yards, by killing the young animals, and destroying the eggs. It may be caught by means of a steel strap baited with a rat or a dead bird.

THE RED-LEGGED CROW *.

These birds, which are partial to rocky and mountainous habitations, are not very common in any part of the world. In our country they frequent some places in Cornwall and North Wales, inhabiting cliffs and ruinous castles along the shores. A few are found on Dover Cliff, where they came entirely by accident: a gentleman in the neighbourhood received from Cornwall, a pair, which escaped, and stocked those rocks. They are not constant to their abode; but frequently, in the course of the year, desert the place for a week or ten days at a time.

The Red-legged Crow is a very tender bird, of elegant form, and unable to bear severe weather. Active, restless, and meddling, it is not to be trusted where things of consequence lie. It is much taken with glittering objects; and is apt to snatch up bits of lighted sticks, so that instances have occurred of houses having been set on fire by it. The injury that it does to thatched houses is sometimes very great; for, tearing holes into them with its long bill, in search of worms and insects, the rain is admitted, and quickens their decay. It also often picks out lime from walls, in search of spiders and flies.

* **DESCRIPTION.** The colour of this Crow is a fine blue or purple black; and its bill and legs are of a bright and deep orange.

SYNONYMS. *Corvus Graculus.* *Linnaeus.*—Crave, ou le Coracias. *Buffon.*—Cornish Chough. *Willughby.*—Killegrew. *Charlton.*—Cornwall Kae. *Sibbald.*—*Bew. Birds*, p. 77. *Penn. Brit. Zool.* vol. i. tab. 35.

These birds commonly fly very high, and they make a more shrill noise than the jackdaw. The Cornish peasantry attend so much to them, that it is very common to see them tame in their gardens. They shriek out aloud at the appearance of any thing strange or frightful; but, when applying for food, or desirous of pleasing those who usually fondle them, their chattering is very soft and engaging.

When tame, they are very docile and amusing; and they are extremely regular to their time of feeding. But, however familiar they may be to their immediate friends, they will not permit a stranger to touch them.

Their nests are built about the middle of the cliffs, or in the most inaccessible parts of ruins. The eggs, which are four or five in number, are somewhat longer than those of the jackdaw, and of a cinereous white colour, marked with irregular dusky blotches. From their being very tender, these birds are seldom seen abroad except in fine weather.

THE CINEREOUS CROW*.

The Cinereous Crow, which is a native of North America, and is extremely common in the neighbourhood of Hudson's Bay, is a very familiar bird, and is fond of frequenting habitations, either houses or tents. But so much is it given to pilfering, that no kind of provisions it can come at, either fresh or salted, is safe from its depredations. It is so bold as to come into tents, sit on the edge of the kettle when hanging over the fire, and steal victuals out of the dishes.

Few creatures are more troublesome to the hunters

* DESCRIPTION. This bird is so small as seldom to weigh more than two or three ounces. Its plumage is brown-gray. The feathers are long, soft, and silky, and in general so much unwebbed, as, in many parts of the body, to resemble hair.

SYNONYMS. *Corvus Canadensis*. Linn.—Geay-brun de Canada. Buffon.—Whiskey Jack, or Geeza. Hcarne.

than these. They will sometimes follow them a day together: will perch on a tree while the hunter is baiting his martin-traps, and as soon as his back is turned, will go and eat the baits. The Cinereous Crows are easily tamed, but they never live long in confinement.

The care that this bird takes in laying up in summer a stock of fruit for winter provision, when no fruit is to be had abroad, is a remarkable instance of foresight in the bird tribe. Its nest is built in trees, and is not unlike the nest of the blackbird and thrush. The female lays four blue eggs, but seldom hatches more than three young-ones. These birds breed early in the spring. They sometimes steal flesh, but never eat it, feeding principally on fruit, moss, and worms.

OF THE ORIOLES IN GENERAL.*

This a noisy, gregarious, and voracious race; and is confined almost exclusively to America. Most of the species form pendulous nests, upon the exterior branches of trees, which secure them from rapacious animals. Several nests are usually constructed on one tree. The Orioles in general feed on fruit, but some of them subsist on insects and grain.

THE RED-WINGED ORIOLE†.

In some parts of America these birds occasionally appear in such immense flocks, that frequently at one

* The characteristics of this tribe are, a straight, conic, sharp-pointed bill; with the mandibles equal in length, and the edges sharp, and inclining inward. The nostrils are small: they are situated at the base of the bill, and are partly covered. The tongue is cleft at the end. The toes stand three forward and one backward, and the middle one is joined near the base to the outer toe.

† **DESCRIPTION.** This bird is about the size of a starling, being nearly nine inches long. The bill is black, and almost an inch in length. The whole body is of a deep black colour:

draw of a net more than three hundred are caught. They feed on insects, wheat, and maize; and are exceedingly destructive to the grain. Their common name in America is *Maize-thief*: they seldom attack the maize except just after it is sown, or when the ear becomes green: then, pecking a hole in the side, the rain is admitted, and the grain spoiled. They are supposed to do this in search of insects. The farmers sometimes attempt their destruction, by steeping the maize before it is sown, in a decoction of white hellebore: the birds that eat this prepared corn, are seized with a vertigo, and fall down stupified. They are so bold and voracious, that a flock of them may frequently be shot at two or three times before they can be driven off; indeed it often happens, that during the second loading of the gun their number increases.

Catesby informs us, that in Carolina and Virginia, these birds breed in swampy places, among the rushes; the points of which they weave so as to form a sort of roof or shed, under which they build their nest, at so judicious a height, that it can never be reached even by the highest floods. Dr. Latham states, that they build between the forks of trees, three or four feet from the ground, in swamps which are seldom penetrable by man.

They are easily caught in traps; and can, without difficulty, be rendered tame, and even taught to speak. They are fond of singing; and are exceedingly playful, either when confined or when suffered to run about the house. With the liveliness and familiarity which they possess, it is said to be highly diverting to place these birds before a looking-glass, and observe their strange and whimsical gesticulations: sometimes they erect the

except the upper part of the wings, which is of a full red. The legs are black.

SYNONYMS. *Oriolus Phœnicus*. *Linnaeus*.—Commandeur. *Buffon*.—Scarlet-feathered Indian Bird. *Willughby*.—Red-winged Starling. *Catesby*.—Red-bird. *Brickell*.

feathers of the head, and hiss at the image; then, lowering their crest, they set up their tail, quiver their wings, and strike at it with their bills. Whether taken young or old, they become immediately tame. It is not unusual to keep them in cylindrical cages with bells; and these cages they turn round in the same manner as squirrels are made to do in this country. But when they have been confined in a cage for some years, they are said to become white, and so stupid and inanimate, as at last not to be able to feed themselves.

THE ICTERIC ORIOLE*, AND WEAVER ORIOLE.

The chief food of the Icteric Oriole consists of insects; and, for the purpose of killing these, the Americans domesticate and keep this bird in their houses. It hops about in a similar manner to the magpie; and has many other gestures of that bird. Albin states, that, in all its actions, it resembles the starlings; and adds, that sometimes four or five of them will unite to attack a larger bird, which, after they have killed, they eat in a very orderly manner, each choosing his part according to his valour. In a wild state the Icteric Orioles are so fierce and bold, that, when disturbed, they will attack even mankind; but, when introduced into our society, they are said to be easily tamed.

Their nests are constructed in a cylindrical form; several on the same tree, and suspended from the extremity of the branches, where they wave freely in the air. In these situations they are far out of the reach of such animals as would otherwise destroy the young-

* **DESCRIPTION.** The Icteric Oriole is, in size, somewhat smaller than a blackbird: of a tawny colour, with the head, throat, back, quill, and tail-feathers black. The wings have each a white spot.

It is a native of Carolina and Jamaica.

SYNONYMS. Oriolus Icterus. *Linn.*—Troupiale. *Buffon.*—Banana Bird from Jamaica. *Albin.*—Large Banana Bird from Jamaica. *Brown.*—Yellow and Black Pie. *Catesby.*

ones. Several other species construct their nests in a similar manner.

Of two females of the *Weaver Oriole**, which were brought some years ago from Senegal to England, it was observed, that, being kept together in a cage, they entwined among the wires some of the stalks of the pimperl, with which they were fed. As this seemed to show a disposition for forming a nest, some rush-stalks were put into the cage. Of these they presently made a large nest; but it was as often deranged as made, the work of one day being spoiled the next. This seemed to prove that the fabrication of the nest in a state of nature, is the work of both male and female, and that the female is not able to finish this important structure by herself.

A bird of this species having, by accident, obtained a thread of sewing-silk, wove it among the wires of its cage; and, on being supplied with more, it interlaced the whole very confusedly, so as to prevent most part of that side of the cage from being seen through. It was found to prefer green and yellow silks to those of any other colour.

OF THE BIRDS OF PARADISE IN GENERAL†.

No class of birds has given rise to more fables than this. By different writers we are taught to understand

* **DESCRIPTION.** This bird is of a yellow colour; the head is brown, with a golden shade, and the quill and tail-feathers are blackish, edged with orange.

It is chiefly found in Senegal, and some other parts of Africa.

SYNONYMS. *Oriolus Textor.* Linn.—Cap-more. Buff.

† The Birds of Paradise have their bills slightly bent, and the base clad with velvet-like feathers. The nostrils are small, and covered. The tail consists of ten feathers; the two middle ones of which, in several of the species, are very long, and webbed only at the base and tips. The legs and feet are large and strong; having three toes forward and one backward, and the middle toe connected to the outer one as far as the first joint.

that they never touch the ground, from the time of their exclusion from the egg, to their death; that they live wholly on *dew*, and that they are produced without legs: that, when they sleep, they hang themselves by the two long feathers of the tail, to the branch of a tree; that the female produces her eggs in the air, which the male receives in an orifice in his body, where it is hatched; and a thousand other stories that are too absurd even to be mentioned.

The whole race, as far as we are at present acquainted with them, are natives of New Guinea, whence they migrate into the neighbouring islands. Their plumage is in general of extremely brilliant colours.

THE GREATER BIRD OF PARADISE*.

There are two varieties of this species, both of which inhabit the islands of Arrou. They are supposed to breed in New Guinea, and to reside there during the wet monsoon; but they retire to the Arrou islands, about a hundred and forty miles eastward, during the dry or western monsoon.

They always migrate in flocks of thirty or forty, and have a leader, which the inhabitants of Arrou call the king. He is said to be black, to have red spots, and to fly far above the flock, which never desert him, but always settle in the same place that he does. They never fly with the wind, as in that case their loose plumage would be ruffled and blown over their heads; and a change of wind often compels them to alight on

* See Plate xiii. Fig. 2.

DESCRIPTION. The general colour of these birds is chestnut, with the neck of a gold-green beneath. The feathers of the back and sides are considerably longer than those of the body. They have two long tail-feathers, which are straight, and taper to the tip.

SYNONYMS. *Paradisea apoda.* Linn.—Oiseau de Paradis. Buff.—Bird of Paradise. Willughby.

the ground, from which they cannot rise without difficulty. When surprised by a heavy gale, they soar to a higher region, beyond the reach of the tempest. There, in a serene sky, they float at ease on their light flowing feathers, or pursue their journey in security. During their flight they cry like starlings; but, when a storm blows in their rear, they express their distressed situation by a note somewhat resembling the croaking of a raven. In calm weather, great numbers of these birds may be seen flying, both in companies and singly, in pursuit of the larger butterflies and other insects on which they feed. They never willingly alight, except on the highest trees.

Their arrival at Arrou is watched by the natives, who either shoot them with blunt arrows, or catch them by means of bird-lime or in nooses. When caught, they make a vigorous resistance, and defend themselves stoutly with their beaks. After being killed, the entrails and breast-bone are taken out, and they are dried with smoke and sulphur, for exportation to Banda, where they are sold for half a rix-dollar each. Thus prepared, they are sent to all parts of India and to Persia, to adorn the turbans of persons of rank, and even the trappings of the horses. Not long ago, they formed an additional ornament to the head-dresses of the British fair.

OF THE CUCKOO TRIBE IN GENERAL.*

The different species of Cuckoos are scattered through the four quarters of the globe, but they are much more common in the hot than in temperate or cold climates. One species only is found in Great Britain.

* These birds have their bill weak, and more or less bending. The nostrils are bounded by a small rim; and the tongue is short and pointed. The toes are situated two forward and two backward. The tail is wedge-shaped, and consists of ten soft feathers.

THE COMMON CUCKOO*.

The Cuckoo visits us early in the spring. Its well-known cry is generally heard about the middle of April, and ceases about the end of June: its stay is short, the old Cuckoos being said to quit this country early in July. These birds are generally supposed to build no nest; but, what is also extraordinary, the female Cuckoo deposits her solitary egg in the nest of another bird, by which it is hatched. The nests she chooses for this purpose are generally those of the hedge-sparrow, water-wagtail, titlark, yellow-hammer, green linnet, or winchat; but of these it has been observed, that she shows the greatest partiality to the nest of the hedge-sparrow.

We are indebted to the observations of Dr. Jenner, for the following account of the habits and economy of this singular bird, in the disposal of its egg. He states that, during the time the hedge-sparrow is laying her eggs, which generally occupies four or five days, the Cuckoo contrives to deposit her egg among the rest, leaving the future care of it entirely to the hedge-sparrow. This intrusion often occasions some disorder; for the old hedge-sparrow, at intervals, while she is sitting, not only throws out some of her own eggs, but sometimes injures them in such a way, that they become

* See Plate xiii. Fig. 4.

DESCRIPTION. The Cuckoo is about fourteen inches in length, and twenty-five in breadth. The bill is black, strong, and somewhat curved. The upper parts of the plumage are chiefly of a dove-colour; the throat is pale gray; and the breast and belly are white, crossed with undulated lines of black. The vent feathers are of a buff-colour, marked with a few dusky spots. The two middle tail feathers are black, tipped with white. The plumage of the young birds is chiefly brown, mixed with ferruginous and black.

SYNONYMS. *Cuculus canorus.* Linn.—Coucou. Buffon.—*Bcw. Birds*, p. 104.—*Penn. Brit. Zool.* vol. i. tab. 36.

addle, so that it frequently happens, that not more than two or three of the parent-bird's eggs are hatched: but, what is very remarkable, it has never been observed that she has either thrown out or injured the egg of the Cuckoo. When the hedge-sparrow has set her usual time, and has disengaged the young Cuckoo and some of her own offspring from the shell, her own young-ones, and any of her eggs that remain unhatched, are soon turned out: the young Cuckoo then remains in full possession of the nest, and is the sole object of the future care of the foster-parent. The young birds are not previously killed, nor are the eggs demolished; but they are left to perish together, either entangled in the bush that contains the nest, or lying on the ground beneath it. On the 18th of June, 1787, Dr. Jenner examined a nest of a hedge-sparrow, which then contained a Cuckoo's and three hedge-sparrow's eggs. On inspecting it the day following, the bird had hatched; but the nest then contained only a young Cuckoo and one young hedge-sparrow. The nest was placed so near the extremity of a hedge, that he could distinctly see what was going forward in it; and, to his great astonishment, he saw the young Cuckoo, though so lately hatched, in the act of turning out the young hedge-sparrow. The mode of accomplishing this was curious: the little animal, with the assistance of its rump and wings, contrived to get the bird upon its back, and, making a lodgment for its burden by elevating its elbows, climbed backward with it up the side of the nest, till it reached the top; where, resting for a moment, it threw off its load with a jerk, and quite disengaged it from the nest. After remaining a short time in this situation, and feeling about with the extremities of its wings, as if to be convinced that the business was properly executed, it dropped into the nest again. Dr. Jenner made several experiments in different nests, by repeatedly putting in an egg to the young Cuckoo; but this he always found to be disposed of in the same manner. It is very remarkable, that nature seems to have

provided for the singular disposition of the Cuckoo, in its formation at this period; for, different from other newly-hatched birds, its back, from the scapulæ downward, is very broad, with a considerable depression in the middle, which seems intended for the express purpose of giving a more secure lodgment to the egg of the hedge-sparrow or its young-one, while the young Cuckoo is employed in removing either of them from the nest. When it is about twelve days old, this cavity is quite filled up, the back assumes the shape of that of nestling birds in general, and at that time the disposition of turning out its companion entirely ceases. The smallness of the Cuckoo's egg, which in general is less than that of the house-sparrow, is another circumstance to be attended to in this surprising transaction, and seems to account for the parent Cuckoo's depositing it in the nests of such small birds only as have been mentioned. If she were to do this in the nest of a bird that produced a larger egg, and consequently a larger nestling, the design would probably be frustrated; the young Cuckoo would be unequal to the task of becoming sole possessor of the nest, and might fall a sacrifice to the superior strength of its partners.

Dr. Jenner observes, that the eggs of two Cuckoos are sometimes deposited in the same nest: he gives the following instance, which fell under his observation. Two Cuckoos and a hedge-sparrow were hatched in the same nest; one hedge-sparrow's egg remained unhatched. In a few hours a contest began between the Cuckoos for possession of the nest; and this continued undetermined till the afternoon of the following day, when one of them, which was somewhat superior in size, turned out the other, together with the young hedge-sparrow, and the unhatched egg. The contest, he adds, was very remarkable: the combatants alternately appeared to have the advantage, as each carried the other several times, nearly to the top of the nest, and again sank down, oppressed by the weight of its burden; till at length, after various efforts, the strongest



1. Rhinoceros. 2. Civet. 3. Cheetah. 4. Nyl Ghaz.

of the two prevailed, and was afterwards brought up by the hedge-sparrow.

No reason can be assigned, from the formation of this bird, why, in common with others, it should not build a nest, incubate its eggs, and rear its own offspring; for it is in every respect perfectly formed for all these offices. To what cause then may we attribute the above singularities? May they not be owing to the following circumstances?—the short residence this bird makes in the country where it is destined to propagate its species, and the necessity that exists of its producing, during that short residence, a numerous progeny. The Cuckoo's first appearance in England, is about the middle of April: its egg is not ready for incubation till some weeks after its arrival, seldom before the middle of May. A fortnight is taken up by the sitting bird in hatching the egg. The young bird generally continues three weeks in the nest before it can fly, and the foster-parents feed it more than five weeks after this period; so that, if a Cuckoo should be ready with an egg much sooner than the time pointed out, not a single nestling would be fit to provide for itself before its parent would be instinctively directed to seek a new residence, and be thus compelled to abandon its offspring; for the old birds take their final leave of this country the first week in July.

“There seems (says Dr. Jenner) no precise time fixed for the departure of young Cuckoos. I believe they go off in succession, probably as soon as they are capable of taking care of themselves; for although they stay here till they become nearly equal in size, and in growth of plumage, to the parent, yet in this very state the fostering care of the hedge-sparrow is not withdrawn from them. I have frequently seen the young Cuckoo of such a size, that the hedge-sparrow has perched on its back, or on its half-expanded wing, in order to gain sufficient elevation to put the food into its mouth. At this advanced age it is probable that

the young Cuckoos procure some food for themselves; like the young rook, for instance, which in part feeds itself, and is partly fed by the old ones, till the approach of the pairing season*."

The same instinctive impulse which directs the Cuckoo to deposit her eggs in the nests of other birds, directs her young-one to throw out the eggs and young of the owner of the nest. The scheme of nature would be incomplete without it; for it would be difficult, if not impossible, for the birds destined to find nourishment for the Cuckoo, to find it also for their own young-ones, after a certain period; nor would there be room for them all to inhabit the nest.

The above are certainly well-attested instances of the Cuckoo's laying its eggs in the nests, and trusting its young to the protection of other birds; but there are instances, equally well attested, of their hatching and feeding their own nestlings. The Rev. Mr. Stafford, one day walking in Blossopdale, in Derbyshire, saw a Cuckoo rise from its nest; which was on the stump of a tree that had been some time felled. In this nest there were two young Cuckoos; one of which he fastened to the ground by a peg and line; and, for many days beheld the old Cuckoo feed them. Mr. Daines Barrington, who recorded this account, had been informed of two other instances of Cuckoo's nests, in which the proper parents fed their young; the one within four miles of London, and the other on the south-west coast of Merionethshire.

It has been conjectured by some persons, that, during winter, the Cuckoo remains in this country, hidden in hollow trees, and in a torpid state. In support of this opinion, Mr. Willughby, in his ornithology, relates the following story: "The servants of a gentleman in the country, having stocked up, in one of the meadows, some old, dry, rotten willows, thought pro-

* Philosophical Transactions, vol. 78.

per, on a certain occasion, to carry them home. In heating a stove, two logs of this timber were put into the lower part, and fire was applied as usual. But soon, to the great surprise of the family, was heard the voice of a Cuckoo, chirping three times from under the stove. Wondering at so extraordinary a cry in winter-time, the servants drew the willow logs from the furnace, and in the midst of one of them they saw something move; when, taking an axe, they opened the hole, and, thrusting in their hands, first they plucked out nothing but feathers; afterwards they got hold of a living animal, and this was the Cuckoo that the fire had awaked. It was, indeed, (continues our historian,) brisk and lively, but wholly naked and bare of feathers, and without any winter provision in its hole. This Cuckoo the boys kept two years afterwards alive in the stove; but whether it repaid them with a second song, the author of the tale has not thought fit to inform us."

A few years ago a young Cuckoo was found in a torpid state, in the thickest part of a furze-bush. When taken up, it soon exhibited signs of life, but was quite destitute of feathers. Being kept warm, and carefully fed, it grew and recovered its coat. In the ensuing spring it made its escape; and, in flying across the river Tyne, was heard to give its usual call.

It would be wrong to assert as a general fact, that Cuckoos remain torpid in this country during winter, because half a dozen (or perhaps not so many) instances are recorded of their having been found in this state. We are much rather led to suppose, that these accidental occurrences have arisen from their being young birds, which had not been strong enough to leave us at the usual time of migration, and which had therefore sought for shelter and warmth in the places where they have been discovered.

It is supposed that there are more male Cuckoos than females: Mr. Pennant observes, that five male birds were caught in a trap in one season; and Dr.

Latham says, that out of about half a dozen that he had examined, chance never directed him to a female. The males alone being vocal, may, however, be one cause why our specimens are chiefly of this sex; their note directing the gunner to take aim, whilst the female is secured by her silence.

The young birds, though helpless and foolish for a great length of time, may be, and often are, brought up tame, so as to become familiar. In this state they will eat bread and milk, fruits, insects, eggs, and flesh either cooked or raw; but in a state of nature, they are supposed to live principally on caterpillars. When fat, they are said to be as good eating as the land-rail.

THE BEE CUCKOO, OR MOROC*.

To this bird is ascribed the faculty of discovering and pointing out to man, and to the quadruped called the Ratel†, the nests of wild bees. It is itself exceedingly fond both of honey and of the bee-maggots; and it knows that, when a nest is plundered, some of the honey must fall to the ground, which consequently comes to its share; but, in general, a part is purposely left by the plunderers, as a reward for its services. The way in which this bird communicates to others the discovery it has made, is as surprising as it is well adapted to the purpose.

The morning and evening are its principal meal-times; at least, it is then that it shows the greatest inclination to come forth, and with a grating cry of *cheer*,

* **DESCRIPTION.** The Bee Cuckoo, in its external appearance, does not much differ from the common sparrow: except that it is somewhat larger, and of a lighter colour: it has also a yellow spot on each shoulder, and the feathers of its tail are dashed with white.

SYNONYMS. *Cuculus indicator.* Linn.—Coucou indicateur. Buffon.—Honey Guide. *Sparrman.*

† *Viverra zibethica* of Linnaeus.

cheer, cheer, to excite the attention of the ratel, as well as of the Hottentots and colonists, of whose country it is a native. Somebody then generally repairs to the place whence the sound proceeds; when the bird, continually repeating its cry of *cheer, cheer, cheer*, flies on slowly, and by degrees, towards the quarter where the swarm of bees has taken up its abode. The persons thus invited accordingly follow; taking care at the same time not to frighten their guide by any unusual noise, but rather to answer it now and then with a soft and gentle whistle, by way of letting the bird know that its call is attended to. When the bees' nest is at some distance, the bird often makes long stages or flights, waiting for its sporting companions between each flight, and calling to them again to come on; but it flies to shorter distances, and repeats its cry more frequently and with greater earnestness, in proportion as they approach nearer to the nest. When the bird has sometimes, in consequence of its great impatience, got too far a-head of its followers, but, particularly when, on account of the unevenness of the ground, they have not been able to keep pace with it, it has flown back to meet them, and with redoubled cries has denoted still greater impatience, upbraiding them, as it were, for being so tardy. When it comes to the bees' nest, whether built in the cleft of a rock, in a hollow tree, or in some cavity of the earth, it hovers over the spot for a few seconds; after which it sits in silence, and for the most part concealed, in some neighbouring tree or bush, in expectation of what may happen, and with a view of receiving its share of the booty. It is probable that this bird always hovers, more or less, in the manner just mentioned, over the bees' nest, before it hides itself; though the people do not always pay attention to this circumstance: at all events, however, one may be assured that the bees' nest is very near, when, after the bird has guided its followers to some distance, it is on a sudden silent.

Having, in consequence of the bird's directions, found

and plundered the nest, the hunters, by way of acknowledgment, usually leave to the bird a considerable share of that part of the comb in which the young bees are hatching; and which is probably to it the most acceptable morsel.

The above account of Dr. Sparrman has undergone some severe though ill-natured animadversions, from the pen of Mr. Bruce. I shall insert them in his own words. "I cannot (he says) conceive that, in a country where there are so many thousand hives, there was any use for giving to a bird a peculiar instinct or faculty of discovering honey, when, at the same time, nature hath deprived him of the power of availing himself of any advantage from the discovery; for man seems in this case to be made for the service of the Moroc, which is very different from the common or ordinary course of things: man certainly needs not this bird; for on every tree and on every hillock he may see plenty of honey at his own deliberate disposal. I cannot then but think, with all submission to these natural philosophers, (Dr. Sparrman, and Jerome Lobo, who has also given an account of this bird,) that the whole of this is an improbable fiction: nor did I ever hear a single person in Abyssinia suggest, that either this, or any other bird, had such a property. Sparrman says it was not known to any inhabitant of the Cape, any more than that of the Moroc was in Abyssinia; it was a secret of nature, hid from all but these two great men, and I most willingly leave it among the catalogue of their particular discoveries."

Dr. Sparrman says, that a nest which was shown to him as belonging to this bird, was composed of slender filaments of bark, woven together in the form of a bottle: the neck and opening hung downwards; and a string, in an arched shape, was suspended across the opening, fastened by the two ends, perhaps for the bird to perch on.

Mr. Barrow, who in the years 1797 and 1798 travelled into the interior of the southern extremity of

Africa, fully confirms the truth of Dr. Sparrman's account. He says, that every one there is too well acquainted with the Moroc to have any doubt as to the certainty, either respecting the bird, or its mode of giving information concerning the repositories of the bees. He tells us further, that it indicates to the inhabitants with equal certainty, the dens of lions, tigers, hyænas, and other beasts of prey and noxious animals. M. Le Vaillant says that the Hottentots are very partial to the Moroc, on account of the service it renders them; and that, once, when he was about to shoot one, they on that account begged him to spare its life.

OF THE WOODPECKERS IN GENERAL.*

The Woodpeckers are a very singular race of birds, that live almost entirely on insects, which they pick out of decayed trees, and from the bark of such as are sound. These they transfix and draw from the crevices by means of their tongue, which is bony at the end, barbed, and furnished with a curious apparatus of muscles, for the purpose of throwing it forward with great force. Their bill is also so strong and powerful, that by means of it they are able to perforate even such trees as are perfectly sound. In the holes which they thus make, they construct their nests. Their voice is acute, and very unpleasant.

THE BLACK WOODPECKER †.

The Black Woodpecker subsists on insects, which it

* The bill is straight, strong, and angular; and at the end, in most of the species, is formed like a wedge, for the purpose of piercing the trees. The nostrils are covered with bristles. The tongue is very long, slender, cylindrical, bony, hard, and jagged at the end. The toes are placed two forward, and two backward; and the tail consists of ten hard, stiff, and sharp-pointed feathers.

† DESCRIPTION. This bird weighs about eleven ounces.

catches on the bark of trees, or between the bark and the wood. It darts out its long tongue, sometimes three or four inches beyond its bill, transfixes the insects with the end, and then with a very quick motion retracts it and swallows them. The feathers of the tail are very stiff; and so firmly set into the rump, that, when the bird has fastened its claws into the inequalities of the bark, he places his strong tail-feathers against it, and thus standing as it were erect, forms a hole by means of his bill. He is able to pierce not only sound, but even hard trees, as the oak and horn-beam. The hole thus made is enlarged within, for the greater convenience of depositing its nest. The damage that the Black Woodpecker does to timber by this means is very great.

The female lays two or three white eggs. This bird has a very loud note; and feeds on caterpillars and insects.

THE WHITE-BILLED WOODPECKER*.

The Spanish settlers of South America have given

Its plumage is black; except the crown of the head, which is of a rich crimson. The head of the female is only marked with red behind.

It inhabits Switzerland, Germany, and several of the northern regions; and is migratory. It is sometimes, but very rarely, found in this country.

SYNONYMS. *Picus Martius*. Linn.—*Pic Noir*. Buffon.—Greatest Black Woodpecker. *Pennant*.

* DESCRIPTION. This species is about the size of a crow. The bill is white, three inches long, and channelled. On the head is a red pointed crest: the head itself and the body in general are black; but the lower part of the back, the rump, and upper tail-coverts, are white. From the eye a white stripe arises, and passes, on each side of the neck, down to the back.

The White-billed Woodpecker is found in Carolina, Virginia, and other parts of South America.

SYNONYMS. *Picus principalis*. Linn.—Grand *Pic Noir à bec blanc*. Buff.—Largest White-billed Woodpecker. *Catesby*.

to the White-billed Woodpecker the name of Carpenter, from the noise that it makes with its bill against the trees in the woods. This is heard at a great distance; and when several of these birds are at work together, the sound is not much unlike that proceeding from woodmen or carpenters. This Woodpecker rattles its bill against the sides of the orifice, till even the woods resound. A bushel of chips, a proof of its labours, is often to be found at the foot of the tree. On examination, its holes have been generally found of a winding form, the better to protect the nest from the effects of the weather.

Catesby (from whose writings the above account has been principally taken) says likewise, that the Canadian Indians make a kind of coronets with the bills of these birds, by setting them in a wreath with the points outward; and that for this purpose they will purchase them at the rate of two or three buck-skins *per* bill.

THE RED-HEADED WOODPECKER*.

In various parts of America these Woodpeckers are extremely common; and few animals can be more destructive than they are, in maize-fields and orchards. They attack the trees in flocks, and eat so much of the fruit that nothing but the skin is left. In some years they are much more numerous than in others. A pre-

* **DESCRIPTION.** This species is about nine inches long. The bill is about an inch and a quarter in length, of a lead colour with a black tip. The head and neck are of a most beautiful crimson; the back and wings are black; the rump, breast, and belly, white: the first ten quills are black, the eleventh black and white, and the rest white with black shafts. It inhabits Carolina, Canada, and most other parts of North America; migrating southwards, according to the severity of the weather.

SYNONYMS. *Picus Erythrocephalus.* Linn.—*Pic de Virginie.* Buffon.

mium of twopence *per* head was formerly paid from the public funds of some of the states, in order, if possible, to extirpate the breed: but this has of late been much neglected.

They remain during the whole year in Virginia and Carolina, but are not seen in such numbers in winter as during summer. In the winter they are very tame; and they are frequently known to come into the houses, in the same manner as the redbreast does in England.

These Woodpeckers, like the other species, build their nests in holes, which they form in the trees; and it is said that the noise they make with their bills in this operation, may be heard more than a mile. Their flesh is by many people accounted good eating.

THE WRYNECK*.

This bird (for there is only one ascertained species of its tribe) is well known in most parts of England. In the form of its tongue and toes it resembles the Woodpeckers, but the slenderness of the bill prevents its being arranged amongst them.

The female builds an artless nest in the hole of a tree, and deposits in it eight or ten perfectly white eggs. Dr. Derham informs us, that although these birds are far from being any way terrible, yet, when in danger, they have such singular contortions of their neck, and

* DESCRIPTION. The bill of the Wryneck is roundish, slightly curved, and weak. The nostrils are bare of feathers, and somewhat concave. The tongue is long, slender, and armed at the point. There are ten flexible feathers in the tail; and the feet are formed for climbing, the toes being placed two backward and two forward. This bird is about the size of a lark, and its plumage consists of different shades of brown, elegantly blended together. The tail-feathers are of a pale ash-colour, marked with black and red, and having four equi-distant bars of black.

SYNONYMS. *Yunx torquilla*. *Linnaeus*.—*Torcol*. *Buffon*.—Barley Bird, in several parts of England. *Bew. Birds*, p. 111.—*Penn. Brit. Zool. vol. i. tab. 36.*

such odd motions with their head, that, when he was a boy, he used to be so much alarmed at them, that he was deterred from either taking their nests or touching the birds, daring no more to venture his hands into their holes, than if a serpent had lodged in them. The young ones, while in the nest, will also hiss like snakes; which may afford an additional preventive against the nest being plundered.

Their food consists principally of ants and other insects, of which they find great abundance lodged in the bark and crevices of trees. They also frequent grass-plots and ant-hills; into which they dart their tongues, and from which they draw out their prey. Mr. White, in his Naturalist's Calendar, tells us that these are so long as to coil round their heads.

The manners of this species were minutely examined by taking a female from her nest, and confining her in a cage for some days. A quantity of mould, with ants and their grubs, was given to her; and it was curious to observe the tongue darted forward and retracted, with such velocity, and such unerring aim, that it never returned without either an ant or a grub adhering to its viscous extremity, and not transfixed by it, as is generally supposed. While feeding, the body was altogether motionless; the head only being turned; and the motion of the tongue was so rapid, that the grubs, which were of a light colour, and were more conspicuous than the tongue, had somewhat the appearance of moving to the mouth by attraction, as a small particle of iron flies to a magnet. The bill was rarely used, except to remove the mould in order to get more readily at the insects. Where the earth was hollow, the tongue was thrust into the cavities, in order to rouse the ants: for this purpose the horny extremity is very serviceable, as a guide to it into the interior.

The Wryneck is a solitary bird, never being seen in any other society than that of its own mate: and even this is only transitory; for as soon as the domestic union is dissolved, which is in the month of September,

each retires and migrates by itself, and does not return till the ensuing spring. The voice of these birds is much like that of the smaller species of hawks. They also sometimes make a noise like a grasshopper.

OF THE NUT-HATCH TRIBE IN GENERAL*.

In the habits and manners of the different species of Nut-hatch, we observed a very close alliance to the Woodpeckers. Most of them feed on insects; and some on nuts, whence their appellation has been acquired.

THE EUROPEAN NUT-HATCH†.

The Nut-hatch, the squirrel, and the field-mouse, which all live much on hazel-nuts, have each a curious way of getting at the kernel. Of the two latter, the squirrel, after rasping off the small end, splits the shell in two with his long fore-teeth, as a man does with his knife; the field-mouse nibbles a hole with his teeth, as

* The characters of this tribe are, a bill for the most part straight, having, on the lower mandible, a small angle: small nostrils covered with bristles: a short tongue, horny at the end and jagged: toes placed three forward and one backward; the middle toe joined closely at the base to both the outer; and the back toe as large as the middle one.

† DESCRIPTION. The length of this bird is five inches and three quarters. The bill is strong and straight, about three quarters of an inch long; the upper mandible is black, and the lower white. All the upper parts of the body are of a blueish gray: the cheeks and chin are white; the breast and belly pale orange-colour; and the quills dusky. The tail is short; and consists of twelve feathers, the two middle ones of which are gray, the two outer spotted with white, and the rest dusky. The legs are pale yellow; the claws are large, and the back one very strong.

SYNONYMS. *Sitta Europea*. *Linnaeus*.—Sitelle, or Torche-pot. *Buffon*.—Nut-hatch, or Nut-jobber. *Willughby*.—Wood-cracker. *Plot*.—Nut-breaker. *Albin*.—*Bew. Birds*, p. 121.—*Penn. Brit. Zool.* vol. i. p. 38.

regular as if drilled with a whimble, and yet so small that one would wonder how the kernel could be extracted through it; while the Nut-hatch picks an irregular ragged hole with his bill; but, as he has no paws to hold the nut firm while he pierces it, he, like an adroit workman, fixes it, as it were in a vice, in some cleft of a tree, or in some crevice; when, standing over it, he perforates the stubborn shell. On placing nuts in the chink of a gate-post where Nut-hatches have been known to haunt, it has always been found that these birds have readily penetrated them. While at work they make a rapping noise, which may be heard at a considerable distance. Dr. Plott informs us that this bird, by putting its bill into a crack in the bough of a tree, sometimes makes a loud sound, as if the branch were rending asunder. Besides nuts, it feeds also on caterpillars, beetles, and various other insects.

The female deposits her eggs, six or seven in number, in some hole of a tree, frequently in one that has been deserted by the woodpecker, on rotten wood mixed with moss. If the entrance be too large, she nicely stops up part of it with clay, leaving only a small hole for herself to pass in and out. While the hen is sitting, if a stick be put into the hole she hisses like a snake; and she is so much attached to her eggs, that she will sooner suffer any one to pluck off her feathers than fly away. During the time of incubation, she is assiduously attended by the male, who supplies her with food. If the barrier of plaster at the entrance of the hole be destroyed whilst these birds have eggs, it is speedily replaced; this is a peculiar instinct, to prevent the nest from being destroyed, by Woodpeckers and other birds of superior size and strength, which build in similar situations.

The Nut-hatch is supposed not to sleep perched (like most other birds) on a twig; for it has been observed, that when kept in a cage, notwithstanding it would perch now and then, yet at night it generally crept into some hole or corner to sleep: and it is remarkable that

when perched, or otherwise at rest, it had mostly the head downward, or at least even with the body, and not elevated like other birds.

These are shy and solitary birds. Like the Woodpeckers, they frequent woods, and run up and down the trees with surprising facility. They often move their tail in the manner of the wagtail. They do not migrate; but, during the winter, they approach nearer to inhabited places, and are sometimes seen in orchards and gardens.

OF THE KINGFISHER TRIBE IN GENERAL*.

These birds frequent the banks of rivers; living principally on fish, which they catch with great dexterity. They swallow their prey whole, but afterwards throw up the indigestible parts. Their wings are short; yet they fly very swiftly.

THE COMMON KINGFISHER†.

In the beauty and brilliancy of its plumage, the Common Kingfisher far excels all the other species of British birds. Its shape is, however, somewhat inelegant, from the great disproportion there is, in size, betwixt the head and bill, and the other parts of the body.

* The bill is sharp, triangular, long, straight, and thick. The tongue is fleshy, short, flat, and sharp. The feet, except in a few species, are formed for climbing, with the toes two backward and two forward.

† DESCRIPTION. The length of the Kingfisher is seven inches, and its breadth eleven. The bill is nearly two inches long, and black; but the base of the lower mandible is yellow. The top of the head, and the sides of the body, are of a dark green, marked with transverse spots of blue. The tail is of a deep blue; and the other parts of the body are dusky orange, white, and black. The legs are red.

SYNONYMS. *Alcedo Ispida*. *Linn.*—Martin pêcheur, ou Alcyon. *Buffon.*—European Kingfisher. *Pennant.*—*Penn. Brit. Zool. vol. i. tab. 38.*

Its usual prey consists of the smaller kinds of fish. It frequently sits on a branch projecting over the current: there it remains motionless, and often watches whole hours, to catch the moment when a little fish rises to the surface of the water under its station; it dives perpendicularly into the water, where it continues several seconds, and then brings up the fish, which it carries to land, beats to death, and afterwards swallows.

When the Kingfisher cannot find a projecting bough, it sits on some stone near the brink, or even on the gravel; but the moment it perceives the fish, it takes a spring upward, of twelve or fifteen feet, and drops perpendicularly from that height. Often it is observed to stop short in its rapid course, and remain stationary, hovering (in a manner not unlike some of the hawk tribe) over the same spot for several seconds. Such is its mode in winter, when the muddy swell of the stream, or the thickness of the ice, constrains it to leave the rivers, and ply along the sides of the unfrozen brooks. At each pause it continues, as it were, suspended at the height of fifteen or twenty feet; and, when it would change its place, it sinks, and skims along within a foot of the surface of the water, then rises and halts again. This repeated and almost continual exercise, shows that the bird dives for many small objects, fishes or insects, and often in vain; for in this way it passes over many a league.

“Kingfishers (says M. Gmelin) are seen all over Siberia; and their feathers are employed by the Tartars and the Ostiaks for many superstitious uses. The former pluck them, cast them into water, and carefully preserve such as float; and they pretend, that if with one of these feathers they touch a woman, or even her clothes, she must fall in love with them. The Ostiaks take the skin, the bill, and the claws, of this bird, and shut them in a purse; and, as long as they preserve this sort of amulet, they believe that they have no ill to fear. The person who taught me this means of living

happy, could not forbear shedding tears: he told me that the loss of a Kingfisher's skin that he had, caused him to lose also his wife and his goods. I observed, that such a bird could not be very rare, since a countryman of his had brought me one, with its skin and feathers; he was much surprised, and said that if he had the luck to find one, he would give it to no person."

M. D'Aubenton was enabled to keep several of these birds for a considerable length of time, by supplying them with small fish, which he put into basins of water, and on which they fed. They refused all other kinds of nourishment.

The Kingfisher lays its eggs, to the number of seven or more, in a hole in the bank of the river or stream that it frequents. Dr. Heysham had a female brought alive to him at Carlisle, by a boy, who said he had taken it the preceding night when sitting on its eggs. His information on the subject was, that "having often observed these birds frequent a bank upon the river Peteril, he had watched them carefully, and at last he saw them go into a small hole in the bank. The hole was too narrow to admit his hand; but, as it was made in soft mould, he easily enlarged it. It was upwards of half a yard long: at the end of it, the eggs, which were six in number, were placed upon the bare mould, without the smallest appearance of a nest." The eggs were considerably larger than those of the yellow-hammer, and of a transparent white colour. It appears from a still later account than this, that the direction of the holes is always upward; that they are enlarged at the end; and have there a kind of bedding formed of the bones of small fish, and some other substances, evidently the castings of the parent animals. This bedding is generally about half an inch thick, and mixed with earth. There is reason to believe, that both male and female come to this spot for no other purpose than to eject the refuse of their food, for some time before the latter begins to lay: and that they dry it by the heat of their bodies; as they are frequently known to continue

in the hole for hours, long before the period for laying. On this disgorged matter the female deposits and hatches her eggs. When the young-ones are nearly full-feathered, they are extremely voracious; and the old birds not supplying them with all the food they could devour, they are continually chirping, and may be discovered by their noise.

It was once believed that, when the body of a Kingfisher was suspended by a thread, some magnetic influence always turned its breast to the north. This, however, is as fabulous as the tradition, that it will preserve woollen cloth from the depredations of moths.

OF THE CREEPER TRIBE IN GENERAL*.

The Creepers are dispersed through most countries of the globe. They feed chiefly on insects, in search of which they run up and down the stems and branches of trees. Most of the species breed in hollows of trees, where they lay many eggs.

THE COMMON CREEPER†, AND RED CREEPER.

Except the humming-bird, this is the smallest of all

* The bills of these birds are curved, slender, and pointed. The tongue is generally sharp, fringed, or tubular. The legs are strong, and formed with three toes forward.

† DESCRIPTION. The bill of the Common Creeper is hooked; and its legs are slender, with the claws very long, to enable it to creep up and down the bodies of trees in search of insects. Its colour is a mixed gray, with the under parts white. The quill-feathers of the wings are brown, and several of them are tipped with white. The tail is long, and consists of twelve stiff feathers.

It is found both in Europe and Asia; and is also very common in some parts of North America, particularly in the neighbourhood of Philadelphia.

SYNONYMS. *Certhia familiaris* *Linnaeus*.—Grimpereau. *Buffon*.—Ox-eye Creeper. *Charlton*.—*Bew. Birds*, p. 125.—*Penn. Brit. Zool.* vol. i. tab. 39.

the feathered tribes; its weight being no more than five drachms. The length of its feathers, and the manner that it has of ruffling them, give it however an appearance much beyond its real size. It is a bird which seems peculiarly fond of the society of man; and in some parts of the world it is often protected by his interested care. From observing its utility in destroying insects, it has long been a custom, with the inhabitants of many parts of the United States, to fix a small box at the end of a long pole, in gardens and about houses, as a place for it to build in. In these boxes the animals form their nests, and hatch their young-ones; which the parent birds feed with a variety of different insects, particularly those species that are injurious in gardens. A gentleman, who was at the trouble of watching these birds, observed that the parents generally went from the nest and returned with insects from forty to sixty times in an hour, and that, in one particular hour, they carried food no fewer than seventy-one times. In this business they were engaged during the greatest part of the day. Allowing twelve hours to be thus occupied, a single pair of these birds would destroy at least six hundred insects in the course of one day; on the supposition that the two birds took only a single insect each time. But it is highly probable that they often took more.

I suspect that this is the bird which Mr. St. John, in his Letters of an American farmer, has called a *Wren*, and of which he records the following story.—Three birds had built their nests almost contiguous to each other. A swallow had affixed hers in the corner of a piazza next his house; a bird which he calls a *Phebe* in the other corner; and a *Wren* possessed a little box, which he had made on purpose, and hung between. These were all quite tame. The *Wren* had, for some time, shown signs of dislike to the box which had been given to it, though it was not known on what account. At length, however, small as it was, it resolved to drive the swallow from its habitation; and, astonishing to

say, it succeeded. "Impudence," says Mr. St. John, "gets the better of modesty;" and this exploit was no sooner performed, than the Wren removed every material to its own box, with the most admirable dexterity. The signs of triumph appeared very visible; it fluttered its wings with uncommon velocity; and an universal joy was perceptible in all its movements. The peaceable swallow, like the passive Quaker, meekly sat at a small distance, and never offered the least opposition. But no sooner was the plunder carried away, than the injured bird went to work with unabated ardour, and in a few days the depredations were repaired." Mr. St. John, to prevent any repetition of the same violence, removed the Wren's box to another part of the house.

In America, the Creeper hatches twice during the summer, and has generally from eighteen to twenty eggs at a time.

The Red Creeper *. This diminutive inhabitant of New Spain, smaller than even the last-mentioned species, I mention merely for the purpose of describing its nest; which, differing, in this respect, from those of most of the other species of Creepers, is pensile.

The nest is formed not unlike a chemist's retort placed with the mouth downward, through which the bird ascends to its offspring in the bulb at the top. Its length is fourteen or sixteen inches; and it is suspended to the most extreme and tender branches of the trees, by means of a kind of woven work, of similar materials to the exterior of the nest. In the broadest part of the bulb, it measures about six inches in diameter. Within, it is lined with soft and downy materials, to guard the bodies of the tender young-ones from inju-

* SYNONYMS. *Certhia Mexicana.* *Linnaeus.*—Oiseau Rouge à bec de Grimpereau. *Buffon.*

ry; and it is altogether so very light, as to be driven about by the most gentle breeze.

OF THE HUMMING-BIRDS IN GENERAL*.

The Humming-birds are the most diminutive of all the feathered tribes. They are natives of the warmer parts of America, and of some of the West-India islands; and bear a great resemblance to each other in manners. Their principal food, is the nectar at the bottom of tubular-shaped flowers: this they extract, while on wing, by means of their long and slender bill. Their name is derived from the humming noise they make with their wings. They are gregarious; and construct an elegant hemispherical nest, in which they lay two small white eggs, that are hatched by the sitting of the male and female alternately. The young-ones are often attacked and devoured by spiders. These birds may be caught by blowing water upon them from a tube; or, like many of our small birds, they may be shot with sand. Small as they are, they are extremely bold and pugnacious. Their colours are too brilliant to be expressed by any pencil.

THE RED-THROATED HUMMING-BIRD †.

The length of this diminutive creature is somewhat more than three inches; of which its bill occupies three quarters of an inch. The male is of a green-gold co-

* The characters of this tribe are, a slender, weak bill, in some species curved, in others straight: the nostrils are minute: the tongue is very long, and formed of two conjoined cylindrical tubes: the legs are weak: the toes placed three forward and one backward: and the tail consisting of ten feathers.

† SYNONYMS. *Trochilus colubris.* Linn.—*Rubis.* Buff.
—Humming-Bird. *Catesby.*—Red-throated Honeysucker.
Pennant.

lour on the upper part, with a changeable copper gloss; and the under parts are gray. The throat and fore-part of the neck are of a ruby colour, in some lights as bright as fire. When viewed sideways, the feathers appear mixed with gold, and beneath they are of a dull garnet colour. The two middle feathers of the tail are similar in colour to the upper plumage, and the rest are brown.

The female, instead of the bright ruby throat, has only a few obscure brown spots; and all the outer tail-feathers, which in the male are plain, are in the female tipped with white,

This beautiful little creature is as admirable for its vast swiftness in the air, and its manner of feeding, as for the elegance and brilliancy of its colours. It flies so swiftly, that the eye is incapable of following its course; and the motion of its wings is so rapid, as to be imperceptible to the nicest observer. Lightning is scarcely more transient than its flight, nor the glare more bright than its colours.

It never feeds but upon the wing, suspended over the flower from which it extracts nourishment; for its only food is the honeyed juice lodged in flowers, and this it sucks through the tubes of its curious tongue. Like the bee, having exhausted the honey of one flower, it wanders to the next in search of new sweets. It admires most those flowers that have the deepest tubes; and in the countries which these birds inhabit, whoever sets plants of this description before his windows, is sure to be visited by great numbers of them. It is very entertaining to see them swarming around the flowers, and trying every tube by putting in their bills. If they find that their brethren have anticipated them, and robbed the flower of its honey, they will pluck it off in a rage, and throw it on the ground; and sometimes they tear it in pieces.

The most violent passions animate at times these diminutive creatures. They have often dreadful contests, when numbers of them happen to dispute the pos-

session of the same flower. They tilt against one another with such fury, as if they meant to transfix their antagonists with their long bills. During the fight they frequently pursue the conquered birds into the apartments of houses where the windows are left open; they take a turn round the room, as flies do in England; and then suddenly regain the open air. They are fearless of mankind; and, in feeding, will suffer persons to come within two yards of them; but, on a nearer approach, they dart away with wonderful swiftness.

The Red-throated Humming-Bird generally builds on the middle branch of a tree, but sometimes in a low bush, or even on a tobacco-stalk: and the nest is very small. It is quite round: the outside is for the most part composed of the green moss common on old pales and trees; and the inside, of the softest vegetable down the birds can collect. The female lays two eggs, of the size of a pea; which are white, and equal in thickness at both ends.

Fernandez Oviedo, an author of great repute, speaks, from his own knowledge, of the spirited conduct even of these diminutive birds, in defence of their young-ones: "When they observe any one climbing a tree in which they have a nest, they attack him in the face, attempting to strike him in the eyes; and coming, going, and returning, with almost incredible swiftness."

The Humming-Bird is seldom caught alive; a friend of M. du Pratz had, however, this pleasure. He had observed one of these birds enter the bell of a convolvulus; and, as it had quite buried itself to get at the bottom, he ran immediately to the place, closed the flower, cut it from the stalk, and carried off the bird a prisoner. He could not, however, prevail with it to eat; and it died in the course of three or four days.

Carlevoix informs us, that, in Canada, he had possession of one of these birds for about twenty-four hours. It suffered itself to be handled; and even counterfeited death that it might escape. A slight frost in the night destroyed it.

"My friend Captain Davis informs me," says Dr. Latham, in his *Synopsis of Birds*, "that he kept these birds alive for four months by the following method:—He made an exact representation of some of the tubular flowers, with paper fastened round a tobacco-pipe, and painted them of a proper colour: these were placed in the order of nature, in the cage in which the little creatures were confined: the bottoms of the tubes were filled with a mixture of brown sugar and water, as often as emptied; and he had the pleasure of seeing them perform every action; for they soon grew familiar, and, though close under the eye, took their nourishment in the same manner as when ranging at large in the open air."

Passerine Birds*.

OF THE STARE TRIBE IN GENERAL†.

There are, belonging to this tribe, about twenty known species, some of which are found exclusively upon the Old, and others on the New Continent: two only are natives of this kingdom. They chiefly feed on insects and worms.

THE STARLING‡.

In the winter season Starlings collect in vast flocks,

* The birds of this order have their bills of a conical form, and pointed at the end; and the feet are formed for perching and hopping, the toes being slender and divided, with slender, bent, and sharp claws.

† In the present tribe the bill is straight, and depressed. The nostrils are guarded above by a prominent rim. The tongue is hard and cloven; and the middle toe is connected to the outermost as far as the first joint.

‡ Few birds are more generally known than the Starling.

and may be known at a great distance by their whirling mode of flight; which M. de Buffon compares to a sort of vortex, in which the collective body performs a uniformly circular revolution, and at the same time continues to make a progressive advance. The evening is the time when Starlings assemble in the greatest numbers, and betake themselves to the fens and marshes. In the fens of Lincolnshire they collect in myriads, and do great damage to the inhabitants by roosting on the reeds, (the thatch of that country,) and breaking them down by their weight.

They chatter much in the evening and morning, both when they assemble and disperse. So attached are they to society, that they not only join those of their own species, but also birds of different kinds, and are frequently seen in company with redwings, fieldfares, and even with owls, jackdaws, and pigeons. Their principal food consists of snails, worms, and insects: they likewise eat various kinds of grain, seeds, and fruit, and are said to be particularly fond of cherries. It is reported of them that they get into pigeon-houses for the purpose of sucking the eggs.

The female builds an artless nest of straw and small fibres, in the hollows of trees, rocks, or old walls, and sometimes in cliffs that overhang the sea. She lays four or five eggs, of a pale greenish ash-colour.

The Starling is a familiar bird, and in a state of captivity is easily trained. Its natural voice is strong and hoarse; but it may be taught, without difficulty, to repeat short sentences, or to whistle tunes with great exactness. In a state of confinement it will eat small pieces of raw flesh, or bread soaked in water.

It is an inhabitant of almost all climates, and is common in every part of England.

SYNONYMS. *Sturnus vulgaris*. *Linnaeus*.—*L'Etourneau*. *Buff.*—*Stare*. *Pennant*. *Bew. Birds*. i. 88.

THE WATER OUZEL*.

This bird frequents the banks of springs and brooks; and prefers those of limpid streams whose fall is rapid, and whose bed is broken with stones and fragments of rocks.

Its habits are singular. Aquatic birds, with palmated feet, swim or dive; those which inhabit the shores, wade, by means of their tall legs, without wetting their body; but the Water Ouzel walks quite into the flood, following the declivity of the ground. It is observed to enter by degrees, till the water reaches its neck; and it still advances, holding its head not higher than usual, though completely immersed. It continues to walk under the water; and even descends to the bottom, where it saunters as on a dry bank. The following is an account of this extraordinary habit, which was communicated by M. Herbert to M. de Buffon:

“ I lay concealed on the verge of the lake Nantua, in a hut formed of pine-branches and snow; where I was waiting till a boat, which was rowing on the lake, should drive some wild ducks to the water’s edge. Before me was a small inlet, the bottom of which gently shelved, till the water was two or three feet deep in the middle. A Water Ouzel stopped here more than an hour, and I had full leisure to view its manœuvres. It entered the water, disappeared, and again emerged on the other side of the inlet, which it thus repeatedly forded. It traversed the whole of the bottom, and in

* DESCRIPTION. The Water Ouzel is, in size, somewhat less than the blackbird. Its bill is black, and almost straight. The eyelids are white. The upper parts of the head and neck are of a deep brown; and the rest of the upper parts, the belly, the vent, and tail, are black. The chin, the fore part of the neck, and breast, are white or yellowish. The legs are black.

SYNONYMS. *Sturnus cinclus*. Linn.—Merle d’eau. Buff.
—Water Crake. Penn.—Water Crow or Piet. Montagu.

so doing seemed not to have changed its element, and discovered no hesitation or reluctance in the immersion. However, I perceived several times, that as often as it waded deeper than the knee, it displayed its wings, and allowed them to hang to the ground. I remarked too, that, when I could discern it at the bottom of the water, it appeared enveloped with air, which gave it a brilliant surface; like that on some sorts of beetles, which in water are always enclosed in a bubble of air. Its view, in dropping its wings on entering the water, might be to confine this air; it was certainly never without some, and it seemed to quiver. These singular habits were unknown to all the sportsmen with whom I talked on the subject; and, perhaps, had it not been for the accident of the snow-hut in which I was concealed, I should also have for ever remained ignorant of them; but the above facts I can aver, as the bird came quite to my feet, and, that I might observe it, I refrained from killing it."

The Water Ouzel is found in many parts of Europe. The female makes her nest on the ground, in some mossy bank near the water, of hay and dried fibres, lining it with dry oak-leaves, and forming to it a portico or entrance of moss. The eggs are five in number; white, tinged with a fine blush of red. A pair of these birds, which had for many years built under a small wooden bridge in Caermarthenshire, were found to have a nest early in May: this was taken, but it contained no eggs, although the bird flew out of it at the time. About a fortnight afterwards they had completed another nest in the same place, enclosing five eggs; this was taken: and, in a month, a third nest, under the same bridge, was taken, that had in it four eggs; undoubtedly the work of the same birds, as no others were seen about that part. At the time that the last nest was taken, the female was sitting; and the instant she quitted the nest, she plunged into the water, and disappeared for a considerable while, till at last she emerged at a great distance down the stream. At ano-

ther time, a nest of the Water Ouzel was found in a steep projecting bank (over a rivulet) clothed with moss. The nest was so well adapted in colour to the surrounding materials, that nothing but one of the old birds flying in with a fish in its bill could have led to the discovery. The young-ones were nearly feathered, but incapable of flight; and the moment the nest was disturbed, they fluttered out and dropped into the water, and, to the astonishment of the persons present, instantly vanished; but in a little time they re-appeared at some distance down the stream, and it was with difficulty that two out of the five were taken.

The Water Ouzel will sometimes pick up insects at the edge of the water. When disturbed, it usually flirts up its tail, and makes a chirping noise. Its song in spring is said to be very pretty. In some places this bird is supposed to be migratory.

OF THE THRUSH TRIBE IN GENERAL*.

Most of the species of Thrush, which are very numerous, feed upon berries and other kinds of fruit. They are stated to be particularly fond of the berries of the juniper. Many of them have a melodious song.

THE SONG-THRUSH, OR THROSTLE†.

The song of this bird is heard during nearly nine months of the year. The compass of its voice is very

* The Thrushes have the following generic character: a straightish bill, bending toward the point, and slightly notched near the end of the upper mandible: the nostrils oval, and for the most part naked: the tongue slightly jagged at the end; the corners of the mouth furnished with a few slender hairs: and the middle toe connected to the outer one as far as the first joint.

† SYNONYMS. *Turdus musicus*. *Linnaeus*.—*La Grive*. *Buffon*.—Throstle, Thrush, or Mavis.

considerable, and when brought up from the nest with woodlarks, or even with nightingales, it is capable of adopting their notes. Few of the choristers of the woods are heard with greater delight than this. It will sometimes sit for hours together on the top of an elevated tree, and make the woods re-echo with its song.

With us the Thrush continues to reside through the whole year, but on the Continent it is migratory; usually disappearing during the frost, and re-appearing for a short visit in the months of March and April, before its migration in May.

These birds occasionally breed twice, and sometimes even thrice in the year, if their former hatches happen to have been destroyed. Their nests are built in woods or orchards, and not unfrequently in thick hedges near the ground. The outside of the nest consists of fine and soft moss, interwoven with dried grass or hay; and the inside is curiously plastered with cow-dung. The eggs are usually five or six in number, of a deep blue colour, marked with black spots. Each brood, for a little while, follows separately its parents; but this does not long continue, for, as soon as the individuals are capable of obtaining their own subsistence, they disperse.

We are informed by M. de Buffon, that in a few of the districts of Poland such immense numbers of Thrushes are sometimes caught, that the inhabitants load small vessels with them for exportation.

THE FIELDFARE *.

Fieldfares, which are well-known winter inhabitants of this island, arrive here in great flocks from Russia, Siberia, and other more northern parts of the continent, about the beginning of October, and feed during that

* SYNONYMS. *Turdus pilaris*. Linn.—Littorne, ou Tour-delle. Buff.—Bew. *Birds*, p. 98.

season on the hawthorn, holly, and other berries. They leave us in March, for their breeding places in Sweden and Norway.

There is reason to suppose that the flocks of these birds keep a kind of watch, to remark and announce the appearance of danger. On any person approaching a tree that is covered with them, they continue fearless, till one at the extremity of the bush, rising on its wings, gives a loud and peculiar note of alarm. They then all fly away, except one other, which continues till the person approaches still nearer, to certify as it were, the reality of the danger, and afterwards he also flies off, repeating the note of alarm.

Though Fieldfares build their nests in high trees, and sit on trees in the day-time, yet they always roost on the ground. These birds were held in high esteem by the Roman epicures; who had them in their aviaries, and fattened them with crumbs of bread mixed with minced figs.

THE BLACKBIRD*.

The food of the Blackbird consists principally of worms and shelled snails; the latter of which, in order to get at the animal, it dashes with great dexterity against the stones. All kinds of insects, as well as fruit, it also eagerly seeks after. In confinement it will eat crumbs of bread; and even flesh, either raw or cooked.

This is a solitary bird; never congregating, and in general preferring woods and retired situations. Its song is a shrill kind of whistle of various notes; which, although extremely fine, is too loud for any place ex-

* SYNONYMS. *Turdus Merula*. Linn.—Merle. Buff.—Amsel. Montagu.—Bew. *Birds*, p. 94.—Penn. Brit. Zool. vol. i. tab. 42.

sept woods or open grounds. It commences this early in the spring, and continues it through some part of the summer; it desists during the moulting season, but resumes it, for some time, in September and the first winter months.

Blackbirds breed early in the spring. They prepare a nest composed externally of green moss, fibrous roots, and other similar materials: the inside is plastered with earth, and afterwards lined with fine dry grass. The nest is usually placed in a thick bush, against the side of a tree, or on a stump in the side of a bank. The female lays four or five light-blue eggs, thickly covered with pale rust-coloured spots, particularly at the large end.

When the young-ones are taken from the nest, they should for some time be fed on raw meat, bread, and bruised hempseed: the meat should be chopped small, the bread a little wetted, and then the whole mixed together. It is necessary to keep them clean.

THE MOCKING BIRD, OR MIMIC THRUSH*.

This capricious little mimic is common throughout nearly the whole of North America, as well as in several of the West Indian Islands. It cannot, indeed, vie with the feathered inhabitants of those countries in brilliancy of plumage; but it is contented with much more rare and estimable qualifications. It possesses not only natural notes of its own, which are truly musical and solemn; but it can at pleasure assume the tone of every

* See Plate xv. Fig. 1.

DESCRIPTION. This bird is about the size of a blackbird, but, in its general form, is somewhat more slender. Its plumage is gray, paler on the under parts of the body than above.

SYNONYMS. *Turdus Polyglottus.* Linn.—Grand Moqueur. Buff.—Singing Bird, Mocking Bird, or Nightingale. Sloane.—Mock Bird. Catesby.

other animal in the forest, from the humming-bird to the eagle, and descending even to the wolf or the raven. One of them, confined in a cage, has been heard to mimic the mewling of a cat, the chattering of a magpie, and the creaking of the hinges of a sign-post in high winds.

The Mocking Bird seems to have a pleasure in leading other birds astray. He is said at one time to allure the smaller birds with the call of their mates; and when they come near, to terrify them with the scream of an eagle. There is scarcely a bird of the forest that is not at times deceived by his call.

But he is not like the mimics among mankind, who seldom possess any independent merit. A Garrick and a Foote have not pleased more in their own characters, than the Mocking Bird does in his. He is the only one of the American singing-birds that can be compared with those of Europe; and, were it not for the attention that he pays to every sort of disagreeable noise, which tends to debase his best notes, there can be little doubt that he would be fully equal to the song of the nightingale in its whole compass. He frequents the dwellings of the American farmers; where, sitting on the roof or chimney, he sometimes pours forth the most sweet and varied notes imaginable. The Mexicans, on account of his various notes and his imitative powers, call him, "The Bird of Four Hundred Tongues." In the warmer parts of America he sings incessantly from March to August, both day and night: beginning with his own compositions, and frequently finishing by borrowing from those of the whole feathered choir. He repeats his tunes with such artful sweetness as to excite both pleasure and surprise.

It is not, however, in the powers of voice alone that these birds are pleasing; they may even be said to dance. When excited into a kind of ecstasy by their own music, they gradually raise themselves from the place where they stand, and, with their wings extended, drop with their head down to the same spot, and whirl

round, accompanying their melody with a variety of interesting gesticulations.

They frequently build their nests in bushes or fruit-trees in the vicinity of houses; but they are so shy, that if a person only look at the nest, they immediately forsake it. The young-ones may be brought up in a cage, and rendered domestic; but this cannot be done without great difficulty, not one attempt in ten being successful for that purpose. If the young-ones are caught in the nest, the mother will feed them for a few days, but is sure to desert them afterwards. If a cat happen to approach the nest, the parent bird will fly at the head of the animal, and, with a hissing noise, scare it away.

The Mocking Bird feeds its young-ones with grasshoppers; and, when it wants any of these insects, it flies into the pastures, flaps its wings near the ground, and makes a booty of three or four at a time, with which it returns to the nest. It also feeds on different kinds of berries; and is itself eaten by the Americans, who account it very delicate food.

THE LOCUST-EATING THRUSH*.

To this new species, which is found in the interior of the southern districts of Africa, and is only met with in places where the migrating locusts† frequent, Mr. Barrow has affixed the specific name of *Gryllivorus*. This he has done with great propriety, as, when such

* DESCRIPTION. The head, breast, and back of the Locust-eating Thrush are of a pale ash-colour, and the abdomen and rump are white. The wings and tail are black: the latter short, and a little forked. From the angle of the mouth a naked space of sulphureous yellow extends under the eye, and a little beyond it; and there are two naked black streaks under the throat.

SYNONYM. *Turdus Gryllivorus*. Barrow.

† *Gryllus migratorius* of Linnæus.

is to be obtained, its whole food seems to consist of the larvæ of these insects, and, except when the locust infests any particular district, this bird is seldom to be found there.

Providence, which has not often given a bane without accompanying it with an antidote, seems to have peculiarly ordained this bird as a relief to the inhabitants of Africa, from the dreadful attacks of these most voracious and most numerous of all insects. But, however astonishing the multitudes of locusts may be, the numbers of the Locust-eating Thrushes are not less so. Their nests, which at a distance seem of enormous size, appear on examination to consist of a number of cells, each of which form a separate nest, with a tube that leads into it through the side; so that what seemed but one great nest, is found to consist of a little republic, of perhaps ten or twenty. One roof of interwoven twigs covers the whole, like that made over the nest of the magpie of our country.

Mr. Barrow saw a vast number of these birds in the district of Sneuberg, about 150 leagues north-east of the Cape. They had not visited that colony for thirteen years before; that is to say, since the last time the locusts had infested it. They had, however, now taken up a temporary abode, in a place which they were not likely, in a short space of time, to be under the necessity of quitting for want of food. Of the innumerable multitudes of the incomplete insects or larvæ of the locusts, that at this time infected the southern districts of Africa, no adequate idea could possibly be formed; for, in an area of nearly two thousand square miles, the whole surface of the earth might literally be said to be covered with them.

OF THE GROSBEAKS IN GENERAL.

In the Grosbeaks we observe a strong, thick, and convex beak; rounded from the base to the point of each mandible, and admirably adapted for breaking in

pieces the shells of the seeds on which they feed. The nostrils are small and round; and the tongue is formed as if the end were cut off. The toes, except in one species, are placed three forwards.

THE CROSS-BILL*.

Doctor Townson, whilst he resided at Göttingen, possessed several Cross-bills. These, by kind treatment, soon becoming tame, he suffered to be at liberty in his study. He had thus constant opportunities of observing them, and as often of admiring their docility and sagacity; but the singular structure of their bills chiefly engaged his attention.

This structure M. de Buffon, perhaps unthinkingly, and certainly unjustly, has considered as one of Nature's freaks, calculated to render the bird much less essential service than a beak in some other form would have done. But, notwithstanding the apparently awkward and useless shape of this member, it has been found to have the best possible adaptation to the destination and habits of the bird.

The two mandibles do not lie straight; but pass, for a considerable part of their length, on the side of each other, like the blades of a pair of scissors. By means of this peculiar construction, the Cross-bills are able to procure their food with the utmost address. They live principally on the seeds that are contained in the cones of the fir or pine; and it is to extract these that this structure is principally adapted. In this operation, they fix themselves across the cone, then bring the points of the beak from their crossed or lateral position

* DESCRIPTION. The male Cross-bills are red, varied with brown or green; and at certain seasons of the year they change to deep red, to orange, or pale yellow. The females are of an olive green colour, which they also change occasionally.

SYNONYMS. *Loxia curvirostra*. Linn.—Bec croisé. Buff.
—Shell Apple. Penn.—Cross-beak. Townson.—Bew. Birds,
p. 130.

to be immediately opposite to each other. In this reduced compass, they insinuate it between the scales, and, distending the two mandibles to their usual position sideways, force the scales open; and then, again bringing the points into contact, pick out the seed, in the same manner as if their bills were formed like those of other birds*.

The degree of lateral force which they are able to exert, is very surprising. This, which they are at times fond of exercising for mere amusement, renders them, in a tame state, not a little mischievous. The Cross-bills which Dr. Townson had at Gottingen would often come to his table while he was writing, and carry off his pencils, little chip boxes in which he occasionally kept insects, and other similar objects, and tear them to pieces almost instantaneously. Their mode of operation was first to peck a little hole; to insert into this their bill, and then to split or tear the object by the lateral force. When he gave them, as he often did, almonds in their shells, they got at the kernel in the same manner; first pecking a hole, and then enlarging this by wrenching off the pieces by the lateral force.

Notwithstanding the apparent awkwardness of this beak, the Cross-bills are able, by bringing the mandibles point to point, even to pick up and eat the smallest seeds. The German bird-catchers usually feed them with poppy and other small seeds; and they shell hemp-seeds in eating them, as well as any other birds whatever. These birds breed in Austria; building their hemispherical nests in the branches of high trees. In these they lay a few whitish eggs, spotted towards the thicker end with red. They are somewhat rare in England.

* While in this act, they are so intent on the business, as frequently to suffer themselves to be caught by means of a horse-hair noose fixed to a long fishing-rod. They are discovered by the twittering noise they make while feeding.

THE GREENFINCH *.

Greenfinches are very common birds in our island. They build their nests in hedges, and lay five or six eggs, of a pale green colour, marked with blood-coloured spots. During the breeding-time, the bird that is not immediately engaged in incubation or nutrition, may often be seen sporting on the wing, in a pleasing manner, over the bush.

They are so easily tamed, as sometimes to eat out of the hand in five or ten minutes after they are taken, if there be an opportunity of immediately carrying them into the dark. The bird should then be put upon the finger, from which, not knowing how to fly in the dark, it will not attempt to move: the finger of the other hand should afterwards be put under its breast, on which it will climb. This must be repeated eight or ten times; and by stroking and caressing the bird at the intervals, it will find that no injury is intended. The light being then let in by degrees, it will very frequently eat bruised seed out of the hand, and afterwards continue tame.

THE CARDINAL GROSBEAK †.

This is an inhabitant of several parts of North America. The melody of its song is said somewhat to resemble that of the nightingale. In spring, and during

* DESCRIPTION. The upper parts of the body are of a yellowish green, and some of the lower parts are white. The outer quill-feathers are edged with yellow. The tail is forked, and the four lateral feathers are yellow at the base. The bill is brownish, and the legs flesh-coloured.

SYNONYMS. *Loxia Chloris*. Linn.—Verdier. Buff.—Bew. *Birds*, p. 136.

† DESCRIPTION. The Cardinal Grosbeak is about eight inches in length. The bill is stout, and of a pale red colour. On the head there is a pointed crest: the plumage is in gene-

great part of the summer, it sits on the tops of the highest trees, and with its loud and piercing notes makes the forests echo.

The Cardinal Grosbeaks are chiefly remarkable for laying up, during summer, their winter provision of maize and buck-wheat. Nearly a bushel of maize has been found in the retreat of one of these birds, artfully covered with leaves and small branches of trees, and only a small hole left for the bird to enter at.

The Americans frequently keep these birds in cages; where they sing, with a very short interval of silence, through the whole year.

THE GRENADIER GROSBEEK *.

The Cape of Good Hope, and some other parts of Africa, are frequented by this bird; which is supposed to be the Finch described by Kolben in his account of that colony. He says that it is chiefly found in marshy and reedy grounds, where it makes its nest and produces its offspring. The nest is formed among the reeds, with small twigs, interwoven so closely with cotton as not to be penetrated by any weather. It is also divided into two compartments; of which the upper is for the male, and the lower for the female and the young-ones. In winter, the colour of these birds is changed from scarlet to ash-colour.

The appearance of the Grenadier Grosbeaks, among

ral of a fine red, but round the bill and throat it is black. The legs are of the same colour as the bill.

SYNONYMS. *Loxia Cardinalis*. Linn.—Grosbec de Virginie. Buffon.—Red Grosbeak. Albin.

* DESCRIPTION. The Grenadier Grosbeak is of about the size of a sparrow. The body is in general of a beautiful red colour. The forehead, sides of the head, chin, breast, and belly, are black. The wings are brown, and the legs pale brown.

SYNONYMS. *Loxia Orix*. Linn.—Cardinal du Cap de Bonne Espérance. Buffon.

the green reeds of their native climates, is said to be very beautiful; for, from the extreme brightness of their colours, they appear like so many scarlet lilies.

THE ABYSSINIAN* AND PHILIPPINE GROSBEEK†.

The Abyssinian Grosbeak forms a curious nest, of pyramidal shape; which is suspended from the ends of branches, like the nests of some other birds of this tribe. The opening is on one side, facing the east: the cavity is separated in the middle by a partition to half its height; up this the bird ascends perpendicularly, and then, descending on the other side, forms its nest in the further chamber. By this means the brood is defended from snakes, squirrels, monkeys, and other mischievous animals; besides being secured from the rains, which in that country last sometimes for five or six months successively.

The *Philippine Grosbeaks* construct their nests in the form of a long cylinder, which swells out into a globular or somewhat oval shape. This is composed

* **DESCRIPTION.** This is somewhat larger than the last species; having the bill strong and black; the head, throat, and breast, black; the upper parts of the body, the belly, and thighs, of a pale yellowish brown; the quills and tail brown, edged with yellow; and the legs reddish gray.

SYNONYMS. *Loxia Abyssinica.* Linn.—Grosbec d'Abissinie. Buff.—Tisserein d'Abissinie. Daudin.

† **DESCRIPTION.** The length of this species is about five inches and a half. The bill and some adjacent parts are brown. The top of the head, and the hind part of the neck and back, are yellow. The lower part of the back is brown. The fore parts of the neck and breast are yellow, and from thence under the belly the colour is yellowish white. The legs are also yellowish.

It is found in the Philippine Islands, and in some parts of Abyssinia.

SYNONYMS. *Loxia Philippina.* Linn.—Toucnam Courvi. Buffon.

of various kinds of fine vegetable fibres, and fastened, by its upper extremity, to the outer branch of a tree. The entrance is from beneath, whence a passage is made to the globular cavity, in which an inner nest and the eggs are placed in perfect security.

THE BENGAL GROSBEAK*.

This bird, says Sir William Jones in the Asiatic Researches, is exceedingly common in Hindostan. He is astonishingly sensible, faithful, and docile; never voluntarily deserting the place where his young-ones are hatched, but notaverse, like most other birds, to the society of mankind, and easily taught to perch on the hand of his master. In a state of nature he generally builds his nest on the highest trees that he can find, especially on the palmyra, or the Indian fig-tree, and he prefers that which happens to overhang a well or a rivulet: he makes his nest of grass, which he weaves like cloth, and shapes like a large bottle, suspending it firmly on the branches, but so as to rock with the wind, and placing it with its entrance downward, to secure it from birds of prey. The nest usually consists of two or three chambers; and it is popularly believed that he lights them with fire-flies, which he is said to catch alive at night, and confine with moist clay or with cow-dung. That such flies are often found in his nest, where pieces of cow-dung are also stuck, is indubitable; but as their light could be of little use to him, it seems probable that he only feeds on them.

He may be taught with ease to fetch a piece of paper,

DESCRIPTION. This bird is somewhat larger than a sparrow. Its general plumage is yellow brown. The head and legs are yellowish. The beak is conical, and very thick in proportion to the body.

SYNONYMS. *Loxia Bengalensis.* Linn.—Orcheff. *Buff.*—Bengal Sparrow. *Albin.*—Yellow-headed Indian Sparrow. *Edwards.*—Indian Grosbeak, Bayas. *Asiat. Res.*

or any small thing that his master points out to him. It is an attested fact, that if a ring be dropped into a deep well, and a signal given to one of these birds, he will fly down with amazing celerity, catch the ring before it touches the water, and bring it up to his master with apparent exultation; and it is confidently asserted, that if a house or any other place be once or twice shown to him, he will carry a note thither immediately, on a proper signal being made. One instance of his docility Sir William Jones was himself an eye-witness of. The young Hindoo women at Benares, and in other places, wear thin plates of gold, called *ticas*, slightly fixed, by way of ornament, between their eyebrows: and, when they pass through the streets, it is not uncommon for the youthful libertines, who amuse themselves with training these birds, to give them a signal, which they understand, and send them to pluck the pieces of gold from the foreheads of their mistresses, which they bring in triumph to their lovers.

THE SOCIABLE GROSBEEK*.

Few birds live together in such large societies, or have a mode of nidification so uncommon, as these. They construct their nests in a species of mimosa; which grows to an uncommon size, and seems well suited to them, on account of its ample head, and strong wide-spreading branches. The tallness and smoothness of its trunk is also a perfect defence against the serpent and monkey tribes. The mode in which the nests are

* **DESCRIPTION.** The length of the Sociable Grosbeak is about five inches and a half. Its colour is rufous-brown above, and yellowish beneath. The bill and forehead are black, the region of the ears is yellowish, and the legs are brown. The tail is short.

This species is an inhabitant of the interior country of the Cape of Good Hope.

SYNONYMS. *Loxia socia*. *Latham*.—*Tisserin republicain*. *Daudin*.

fabricated is highly curious. In one tree, described by Mr. Paterson, there could not be fewer than from eight hundred to a thousand under one general roof. Mr. P. calls it a roof, because he says it resembles that of a thatched house; and projects over the entrance of the nest below, in a very singular manner. The industry of these birds "seems almost equal (observes this traveller) to that of the bee. Throughout the day they appear to be busily employed in carrying a fine species of grass; which is the principal material they employ for the purpose of erecting this extraordinary work, as well as for additions and repairs. Though my short stay in the country was not sufficient to satisfy me, by ocular proof, that they added to their nest as they annually increased in numbers; still, from the many trees which I have seen borne down by the weight, and others which I have observed with the boughs completely covered over, it would appear that this is really the case. When the tree, which is the support of this aerial city, is obliged to give way to the increase of weight, it is obvious that the birds are no longer protected, and are under the necessity of rebuilding in other trees. One of these deserted nests I had the curiosity to break down, for the purpose of informing myself of the internal structure of it; and found it equally ingenious with that of the external. There were many entrances; each of which formed a regular street, with nests on both sides about two inches distant from each other. The grass with which the birds build is called the Boshman's grass; and I believe the seed of it to be their principal food; though, on examining their nests, I found the wings and legs of different insects. From every appearance, the nest which I dissected had been inhabited for many years; and some parts of it were much more complete than others. This, therefore, I conceive to amount nearly to a proof, that the animals added to it at different times, as they found necessary, from the increase of their family, or rather of the nation or community."

THE BULFINCH*.

In a state of nature the Bulfinch has but three cries, all of which are unpleasant: but if instructed methodically, and accustomed to finer, mellower, and more lengthened strains, it will listen with attention; and the docile bird, whether male or female, without relinquishing its native airs, will imitate exactly, and sometimes even surpass, its master. "I know a curious person, (says the author of the *Ædonologie*,) who having whistled some airs quite plain to a Bulfinch, was agreeably surprised to hear the bird add such graceful turns, that the master could scarcely recognise his own music, and acknowledged that the scholar excelled him." It must, however, be confessed, that, if the Bulfinch be ill-directed, it acquires harsh strains. A friend of M. de Buffon saw one that had never heard any persons whistle but carters; and it whistled like them, with the same strength and coarseness. The Bulfinch also easily learns to articulate words and sentences; and utters them with so tender an accent, that we might almost suppose it felt their force.

These birds are susceptible of personal attachment, which is often strong and durable. Some have been known, after escaping from confinement and living a whole year in the woods, to recognise the voice of their mistress, and return to her. Others have died of melancholy, on being removed from the first object of their attachment. They will also remember injuries received: a Bulfinch that had been thrown to the ground in its cage by some of the rabble, though it did not appear much affected at the time, fell into convulsions ever afterwards at the sight of any mean-looking person, and expired in one of these fits, eight months after the accident.

* SYNONYMS. *Loxia Pyrrhula*. Linn.—Bouvereuil. Buff.—Alp, or Nope. Willughby.—Red-hoop, Tony-hoop. Montague.—Bew. Birds. p. 138.

Bulfinches are not uncommon in England: they construct their nests in bushes, about the middle of May. These are usually built in orchards, woods, or parks, where the trees are numerous. The nest of the Bulfinch is a fabric apparently constructed with little art; but it so nearly resembles the colour of the surrounding foliage, as not easily to be discovered. The female lays four or five eggs, of a blueish colour, marked at the larger end with dark brown and faintly reddish spots.

In the summer-time these birds chiefly frequent woods and retired places; but in winter they approach gardens and orchards. Here, as soon as the vegetation commences, they make great havoc among the buds of the trees.

THE BUNTING TRIBE.

These birds have a conical bill, and the sides of each mandible bending inward. On the roof of the upper mandible is a hard knob, used for the breaking of hard seeds.

THE WHIDAH BIRD*.

In the kingdom of Angola, on the western coast of Africa, and in the country around Mosambique, on

* See Plate xv. Fig. 2.

DESCRIPTION. In its *summer plumage* the neck of the Whidah Bird has, at the back, a broad semi-collar, of orange yellow colour. The breast is reddish, the under parts of the body and the thighs are white; and the neck, the back, the wings, and tail, are black. In the tail there are four feathers much longer than the others: of these, two are about thirteen inches in length, and are bent somewhat like those of a cock; the other two are shorter, considerably broader, and each terminate in a slender thread.

The *winter plumage* is entirely different from the above. The four long tail-feathers fall off: the head is varied with black and white: the breast is black; and the upper wing-coverts

the eastern coast of that quarter of the world, these birds are found in great numbers. They are somewhat larger than a sparrow, and subsist on seeds of various kinds.

It is a remarkable fact, that the Whidah Birds have in winter a plumage entirely different from that by which they are distinguished during the summer; and that even their most characteristic feathers are every year shed, without being renewed for several months. When the birds are brought into northern climates, this change generally takes place about the beginning of November. Their winter plumage continues till the spring; and the tail-feathers are not again completed till the end of June or the beginning of July. The colour of the beak and legs, the former blackish and the latter flesh-coloured, is permanent.

In the month of May, 1820, Mr. Carlisle favoured me with the following account of a bird of this species, which I have often seen in his possession: "The habits and manners of my Whidah Bird have proved both entertaining and instructive. It has been my constant companion for more than five years, and our mutual good understanding has increased every day. As an intelligent creature, it readily distinguishes me from other persons, and never fails to show its preferable attachment, by a little note and by fluttering toward the nearest side of the cage, on my entering and leaving the room. When clad in its black and orange plumage, and ornamented with its long and crested tail-feathers, it sings much like the warble of the house-swallow, and, during its song, it shakes its head rapidly sideways, looking steadily at me, as if to attract my regard. It then, as if in a state of ecstasy, jumps quickly

are dirty yellow. The feathers of the tail and wings are dark brown; and those of the under part of the body are white.

SYNONYMS. *Emberiza paradisea*. Linn.—*La Veuve au Collier d'or*. Buffon.

from perch to perch, rattling its tail with a noise somewhat resembling that which is made by the rattle-snake. When it wants fresh water, sand, or food, it taps quickly with its beak against the cage, until it attracts my notice. Its only food is canary-seed. I have observed that, on first uncovering its cage, it begins to stretch out its legs and wings, then it hops down to sip water; afterwards it eats for about half an hour, picks some sand, and then carefully prunes its feathers. In its ordinary plumage this bird nearly resembles the reed-sparrow; and so complete is its change, that not one of the former feathers remain after either of the two moultings. These moultings take place half yearly, and the shedding of its principal tail-feathers, has been, for five autumns, within three days of the same date in each year.

“As the claws of confined birds grow inconveniently long, I have generally found it expedient to clip those of my bird twice a year, and this process was at first attended with anger; but lately the occasion is remembered, the bird quietly suffers itself to be caught, and lies patiently in my hand until the operation is over. During this operation it sometimes eats sugar out of my mouth; and when so indulged, it forgets its position so far as to sing a few notes.”

A pair of Whidah Birds kept in France for many years, were very lively and active. They were fed chiefly on millet and canary-seed, and occasionally on chickweed and chicory. The male had a shrill kind of song, which he generally commenced about the time that his long tail-feathers began to grow. These birds did not breed, nor indeed did they make any preparations for the formation of a nest.

OF THE FINCH TRIBE IN GENERAL.

The Finches are easily distinguished from other birds, by their having a bill very conical and sharp-pointed, and somewhat slender towards the end. They

are a numerous and active race, dispersed widely over the world, and feeding principally on insects and grain.

THE LINNET*.

For the sweetness of its song the Linnet is much admired: its notes are considered little inferior to those of the most musical of our birds. The Linnet may also easily be taught to imitate the song of any other bird, if brought up with it from the nest.

Linnetts have young-ones about the month of May. They usually form their nest in a thick bush or hedge. This is small: the outside is composed of bents, dried weeds, and straw; and the inside of horse-hairs, and wool or cotton, mixed with downy materials collected from dried plants. The female lays four or five white eggs, speckled particularly towards the large end, with red.

The season in which the bird-catchers usually take these birds, is during the months of June, July, and August, or about Michaelmas. They employ for this purpose limed twigs or clap-nets. If, when caught, they be put into store-cages, and fed on any favourite seed for two or three days, they will soon become tame. After this they may be put into separate cages, and fed

* DESCRIPTION. The length of the Linnet is about 5½ inches. The bill is blueish gray. The eyes are hazel: the upper parts of the head, neck, and back, are of a dark reddish brown, the edges of the feathers pale; the under parts are of a dirty reddish white; the breast is of a deeper colour than the rest, and in spring changes to a beautiful crimson; the sides are spotted with brown; the quills are dusky, edged with white; the tail is brown, and with white edges, except the two middle feathers, which have reddish margins; the legs are brown: the female wants the red colour on the breast, instead of which she is there marked with streaks of brown; she has less white on her, and her colours, in general, are less bright than those of the male. *Bewick.*

SYNONYMS. *Fringilla linaria.* Linn.—*La Linotte.* Buff.—*Bew. Birds, p. 176.*

with rape or canary-seed. If it be intended that the Linnet should imitate the notes of any other bird, it ought to be taken from the nest when about ten days old.

THE COMMON SPARROW*.

No bird is better known in every part of Great Britain than the Sparrow. It is a very familiar bird, but so crafty as not to be easily taken in snares. In a wild state its note is only a chirp: this arises, however, not from want of powers, but from its attending solely to the note of the parent birds. A Sparrow, when fledged, was taken from the nest, and educated under a linnet; it also heard, by accident, a goldfinch; and its song was, in consequence, a mixture of the two.

Few birds are more execrated by the farmers, and perhaps more unjustly so, than Sparrows. It is true, they do some injury in devouring corn; but they are probably more useful than noxious. Mr. Bradley, in his General Treatise on Husbandry and Gardening, shows, that a pair of Sparrows, during the time they have their young-ones to feed, destroy on an average, every week, about 3360 caterpillars. This calculation he founded upon actual observation. He discovered that the two parents carried to the nest forty caterpillars in an hour. He supposed the Sparrows to enter the nest only during twelve hours each day, which would cause a daily consumption of 480 caterpillars; and this average gives 3360 caterpillars extirpated weekly from a garden. But the utility of these birds is not limited to this circumstance alone; for they likewise feed their young-ones with butterflies and other winged insects, each of which, if not destroyed, would be the parent of hundreds of caterpillars.

* SYNONYMS. *Fringilla domestica*. *Linnaeus*.—*Moineau* franc. *Buffon*.—House-Sparrow. *Willughby*.—*Bcw. Birds*, p. 154.

Sparrows build early in the spring; and generally form their nests under the eaves of houses, or in holes in the walls. But when such convenient situations are not to be had, they build in trees a nest bigger than a man's head, with an opening at the side. It is formed of straw and hay, and lined with feathers, and so nicely managed as to be a defence against both wind and rain. Sparrows sometimes form their nest in the bottoms of rooks' nests; and this seems a favourite situation with them.

Mr. Smellie relates a pleasing anecdote of the affection of these birds towards their offspring:—"When I was a boy, (says this gentleman,) I carried off a nest of young Sparrows, about a mile from my place of residence. After the nest was completely moved, and while I was marching home with them in triumph, I perceived, with some degree of astonishment, both the parents following me at some distance, and observing my motions in perfect silence. A thought then struck me, that they might follow me home, and feed the young according to their usual manner. When just entering the door I held up the nest, and made the young-ones utter the cry which is expressive of the desire of food. I immediately put the nest and the young in the corner of a wire cage, and placed it on the outside of a window. I chose a situation in the room where I could perceive all that should happen, without being myself seen. The young animals soon cried for food. In a short time both parents, having their bills filled with small caterpillars, came to the cage; and after chatting a little, as we would do with a friend through the lattice of a prison, gave a small worm to each. This parental intercourse continued regularly for some time; till the young-ones were completely fledged, and had acquired a considerable degree of strength. I then took one of the strongest of them, and placed him on the outside of the cage, in order to observe the conduct of the parents after one of their offspring was emancipated. In a few minutes both parents arrived, loaded, as usual, with

food. They no sooner perceived that one of their children had escaped from prison, than they fluttered about, and made a thousand noisy demonstrations of joy, both with their wings and their voices. These tumultuous expressions of unexpected happiness at last gave place to a more calm and soothing conversation. By their voices and their movements it was evident that they earnestly entreated him to follow them, and to fly from his present dangerous state. He seemed to be impatient to obey their mandates; but, by his gestures, and the feeble sounds he uttered, he plainly expressed that he was afraid to try an exertion he had never before attempted. They, however, incessantly repeated their solicitations: by flying alternately from the cage to a neighbouring chimney-top, they endeavoured to show him how easily the journey was to be accomplished. He at last committed himself to the air, and alighted in safety. On his arrival, another scene of clamorous and active joy was exhibited. Next day I repeated the same experiment, by exposing another of the young-ones on the top of the cage. I observed the same conduct with the remainder of the brood, which consisted of four. I need hardly add, that not one either of the parents or children ever afterwards re-visited the execrated cage."

THE GOLDFINCH*.

Goldfinches are very beautiful and well-known birds, much esteemed for their docility, and the sweetness of their song. They are fond of orchards, and frequently build their elegant mossy nest in an apple or pear-tree. They commence this operation about the month of April, when the fruit-trees are in blossom. As they excel nearly all our small birds in beauty of plumage, so also they do in the art which they employ in the

* **SYNONYMS.** *Fringilla carduelis.* Linn.—Chardonneret. Buffon.—Thistlefinch. Willughby.—Bew. *Birds*, p. 165.

formation of this structure. The nest is small: its outside consists of fine moss, curiously interwoven with other materials; and the inside is lined with grass, horse-hair, wool, feathers, and down. The eggs are five in number, of a white colour, speckled and marked with reddish brown.

These birds may be caught in great numbers, at almost any season of the year, either with limed twigs, or the clap-net; but the best time is said to be about Michaelmas. They are easily tamed; and are remarkable for their extreme docility, and the attention they pay to instructions. It requires very little trouble to teach them to perform several movements with accuracy; to fire a cracker, and to draw up small cups containing their food and drink.

Some years ago, the Sieur Roman exhibited in this country the wonderful performances of his birds. These were Goldfinches, Linnets, and Canary-birds. One appeared dead, and was held up by the tail or claw without exhibiting any signs of life. A second stood on its head, with its claws in the air. A third imitated a Dutch milkmaid going to market, with pails on its shoulders. A fourth mimicked a Venetian girl looking out at a window. A fifth appeared as a soldier, and mounted guard as a sentinel. The sixth was a cannonier, with a cap on its head, a firelock on its shoulder, and a match in its claw; and discharged a small cannon. The same bird also acted as if it had been wounded: it was wheeled in a little barrow, to convey it (as it were) to the hospital; after which it flew away before the company. The seventh turned a kind of windmill. And the last bird stood in the midst of some fire-works which were discharged all round it; and this without its exhibiting the least sign of fear.

In solitude the Goldfinch delights to view its image in a mirror; fancying, probably, that it sees another of its own species: and this attachment to society seems to equal the cravings of nature; for it is often observed to pick up the hemp-seed, grain by grain, and advance to

eat it at the mirror, imagining; no doubt, that it is thus feeding in company.

If a young Goldfinch be educated under a canary-bird, a woodlark, or any other singing bird, it will readily catch its song. Mr. Albin mentions a lady who had a Goldfinch which was even able distinctly to speak several words.

Towards winter these birds usually assemble in flocks. They feed on various kinds of seeds, but are more partial to those of the thistle than any others. They sometimes have been known to attain a great age. Willughby speaks of one that was twenty-three years old; and Albin says, that they not unfrequently arrive at the age of twenty years.

THE CANARY-FINCH *.

If, observes M. de Buffon, the nightingale is the songster of the woods, the Canary-bird must be considered as the musician of the chamber. It is a social and familiar bird, capable of recollecting kindnesses, and even of some degree of attachment towards those by whom it is fed and attended. In a state of nature we know but little of its manners and economy. Like the rest of its tribe, it feeds chiefly on seed and different kinds of grain. It inhabits the woods of Italy, Greece, and the Canary Islands; from the latter of which it appears to have been first brought into Europe, about the middle of the fourteenth century. These birds, however, are now so commonly bred in our own country, that we are not often under the necessity of crossing the ocean for them.

It is not generally known, that the song of the Canary-bird is usually composed either of the titlark's or the nightingale's notes. Mr. Barrington saw two of

* SYNONYMS. *Fringilla Canaria*. *Linnaeus*.—Serin des Canaries. *Buffon*.—Canary-bird. *Willughby*.

these birds which came from the Canary Islands, neither of which had any song at all; and he was informed that a ship afterwards brought over a great number of them, all of which had the same defect. Most of the birds that are imported from the Tyrol, have been educated under parents, the progenitors of which were instructed by a nightingale. Our English Canary-birds have, however, more of the titlark's than of the nightingale's notes.

Dr. Darwin relates a very singular anecdote respecting one of these birds: "On observing (says he) a Canary-bird at the house of Mr. Hervey, near Tetbury, in Derbyshire, I was told that it always fainted away when its cage was cleaned; and I desired to see the experiment. The cage being taken from the ceiling, and the bottom drawn out, the bird began to tremble, and turned quite white about the root of its bill: it then opened its mouth as if for breath, and respired quick, stood up straighter on its perch, hung its wings, spread its tail, closed its eyes, and appeared quite stiff and cataleptic for nearly half an hour; and at length, with much trembling and deep respirations, came gradually to itself."

In the month of May, 1820, a Frenchman, whose name was Dujon, exhibited in London twenty-four Canary-birds, many of which he said were from eighteen to twenty-five years of age. Some of these balanced themselves, head downward, on their shoulders, having their legs and tail in the air. One of them taking a slender stick in its claws, passed its head between its legs, and suffered itself to be turned round, as if in the act of being roasted. Another balanced itself, and was swung backward and forward on a kind of slack-rope. A third was dressed in military uniform, having a cap on its head, wearing a sword and pouch, and carrying a firelock in one claw: after some time sitting upright, this bird, at the word of command, freed itself from its dress, and flew away to the cage. A fourth suffered itself to be shot at, and, falling down as if dead, was

put into a little wheel-barrow, and wheeled away by one of its comrades; and several of the birds were at the same time placed upon a little fire-work, and continued there quietly, and without alarm, till it was discharged.

OF THE FLY-CATCHERS IN GENERAL.

The characters of this genus are, a bill flattened at the base, almost triangular, notched at the end of the upper mandible, and beset with bristles. The toes in most of the species are divided as far as the origin.

THE SPOTTED FLY-CATCHER *.

This is one of the most mute, and most familiar of all our summer birds. It visits us in spring, rears its young ones, and leaves the country in September.

Mr. White says, that a pair of these birds built every year in the vines that grew on the walls of his house at Selborne. They one year inadvertently placed their nest on a naked bough, perhaps in a shady time, not being aware of the inconvenience that followed; but a hot, sunny season coming on before the brood was half fledged, the reflection of the wall became insupportable, and must inevitably have destroyed the tender young-ones, had not affection suggested an expedient, and prompted the parent birds to hover over the nest during all the hotter hours; while with wings expanded, and mouths gaping for breath, they screened off the heat from their suffering offspring.

* **DESCRIPTION.** The length of this species is about four inches and three quarters: the bill is dusky and beset with short bristles: the head and back are light brown, obscurely spotted with black: the wings and tail are dusky, and the former edged with white: the breast and belly are white: the throat, sides, and feathers under the wings, are tinged with red; and the legs are black.

SYNONYMS. *Muscicapa* Grisola. *Linnaeus*.—Gobe-Mouche. *Buffon*.—*Stoparola*. *Ray*.—Cobweb. *Morton*.—Rafter, Bee-bird, Cherry-sucker, Chanchider. *Montagu*.

The female lays four or five eggs: the nest is carelessly made, and consists chiefly of moss, mixed with wool and fibres, so strong, and so large, (says M. de Buffon,) that it appears surprising how so small an artificer could make use of such stubborn materials." When its offspring are able to fly, it retires with them among the higher branches of the trees, sinking and rising perpendicularly among the flies which hum below.

This bird feeds on insects, which it catches whilst on wing. It sometimes watches for its prey sitting on a branch or post, and, with a sudden spring, takes it as it flies, and then immediately returns to its station to wait for more. It is said, likewise, to be fond of some kinds of fruit. It is generally believed to have no song. The Rev. Revett Sheppard, however, informs me, that in the garden belonging to the master of Caius College, Cambridge, a Spotted Fly-catcher used frequently to sit on a rail, and entertain him with its notes, which, he says, were very pleasing, and between those of a wag-tail and golden-crested wren.

OF THE LARKS IN GENERAL.

In this tribe the bill is straight, slender, bending a little towards the end, and sharp-pointed. The nostrils are covered with feathers and bristles; and the tongue is cloven at the end. The toes are divided to the origin; and the claw of the back toe is very long, and either straight or very little bent.

THE SKY-LARK*.

The Sky-lark forms its nest on the ground, generally between two clods of earth, and lines it with dried grass

* SYNONYMS. *Alauda Arvensis*. *Linnaeus*.—Alouette. *Buffon*.—Field-lark or Sky-lark. *Pennant*.—*Bew. Birds*, p. 178.

and roots. The female lays four or five eggs, which are hatched in about a fortnight; and she generally produces two broods in the year. When hatched, the mother watches over them with a truly maternal affection; she may then be seen fluttering over their heads, directing their motions, anticipating their wants, and guarding them from danger.

The instinctive warmth of attachment which the female Sky-lark bears towards her own species, often discovers itself at a very early period, and even before she is capable of becoming a mother; which might be supposed to precede, in the order of nature, the maternal solicitude. "In the month of May (says M. de Buffon) a young hen-bird was brought to me, which was not able to feed without assistance. I caused her to be educated; and she was hardly fledged, when I received from another place a nest of three or four unfledged Sky-larks. She took a strong liking to these new comers, which were scarcely younger than herself; she tended them night and day, cherished them beneath her wings, and fed them with her bill. Nothing could interrupt her tender offices. If the young-ones were torn from her, she flew to them as soon as she was liberated, and would not think of effecting her own escape, which she might have done a hundred times. Her affection grew upon her: she neglected food and drink; she now required the same support as her adopted offspring, and expired at last, consumed with maternal anxiety. None of the young-ones survived her. They died one after another; so essential were her cares, which were equally tender and judicious."

The common food of young Sky-larks is worms and insects; but after they are grown up they live chiefly on seeds, herbage, and most other vegetable substances. These birds are easily tamed, and they become so familiar as to eat off the table, and even to alight on the hand; but they cannot cling by their toes, on account of the form of the hinder toe, which is straight and very

long. This is the reason why they never perch on trees.

The Lark commences his song early in spring, and continues it during the whole of the summer. It is heard chiefly in the morning and evening, and the Lark is one of those few birds that chaunt their mellow notes on the wing. Thomson elegantly describes it as the leader of the warbling choir:—

Up springs the Lark,
Shrill-voiced and loud, the messenger of morn:
Ere yet the shadows fly, he, mounted, sings
Amid the dawning clouds, and from their haunts
Calls up the tuneful nations.

The Lark mounts almost perpendicularly, and by successive springs, into the air; where it hovers at a vast height. Its descent is in an oblique direction; unless threatened by some ravenous bird of prey, or attracted by its mate, when it drops to the ground like a stone. On its first leaving the earth, its notes are feeble and interrupted; but, as it rises, these gradually swell to their full tone. There is something in the concomitant scenery, that renders the music of the Lark peculiarly delightful. The placid landscape and various rural charms, all contribute to heighten our relish for its pleasing song.

These birds become musical in the spring, and continue so for several months; but in winter their song forsakes them. They then assemble in flocks, grow fat, and are caught in vast numbers by the bird-catchers. As many as four thousand dozen have been taken in the neighbourhood of Dunstable, between September and February; but this holds no proportion to what are sometimes caught in different parts of Germany, where there is a tax upon them. Keysler says, that at one time this tax produced six thousand dollars (about nine hundred pounds sterling) every year to the city of Leipsic.

Larks that are caught in the day-time are taken in

clap-nets, of fifteen yards in length, and two and a half in breadth; and they are enticed by bits of looking-glass fixed in a piece of wood, and placed in the middle of the nets. These are put into a quick whirling motion, by a string which the larker commands; he also makes use of a decoy-bird. This kind of net is used only till the fourteenth of November; for the Larks will not frolic in the air, and consequently cannot be inveigled in this manner, except in fine sunny weather. When the weather becomes gloomy, the larker changes his engine; and makes use of a trammel-net, twenty-seven or twenty-eight feet long, and five broad. This is put on two poles, eighteen feet long, and carried by men, who pass over the fields, and quarter the ground as a setting-dog would. When the men hear or feel that a Lark has hit the net, they drop it down, and thus the birds are taken.

THE WOODLARK *.

In many respects, both of habit and appearance, these birds differ from the skylark. They perch as well in trees as on the ground; but this they do only on the

* DESCRIPTION. The Woodlark is somewhat smaller than the sky-lark, and its form is shorter and more thick. The top of the head and the back are marked with large black spots, edged with pale reddish brown. The head is surrounded with a whitish coronet of feathers, reaching from eye to eye. The throat is of a yellowish white, spotted with black. The breast is tinged with red; the belly is white; and the coverts of the wings are brown, edged with white and dull yellow. The quill-feathers are dusky; the exterior edges of the first white, and of the others yellow; and their tips are blunt and white. The first feather of the wing is shorter than the second: in the sky-lark they are nearly equal. The tail is black, the outermost feather tipped with white: the exterior web, and the inner side of the interior web, are also white; in the second feather the exterior web only is white. The legs are of a dull yellow.

SYNONYMS. *Alauda arborea*. *Linnaeus*.—*Le Cujelier*. *Buff.*
—*Bew. Birds*, vol. i. p. 189.

largest branches,* where they are able to secure their hold without positively embracing the stems with their toes. The sky-lark forms its nest amongst grass or corn, and the Woodlark usually at the foot of a bush, near the bottom of a hedge, or in lays where the grass is rank and dry. The fabric is of loose texture, and constructed of withered herbs, and fibrous roots, with a few horse-hairs in the inside. It has scarcely any hollow, the bottom being nearly on a level with the sides. The whole nest is seldom much more than half an ounce in weight. The number of eggs is about four; these are of a pale bloom-colour, beautifully mottled, and clouded with red and yellow.

The young birds are tender, and not easily to be reared in a cage. When first taken from the nest, they should be fed with raw sheep's heart, or other lean fresh meat, mixed with hard-boiled egg, a little bread, and bruised hemp-seed. These must be chopped together as fine as possible, and moistened with water.

From what circumstance these birds have obtained the appellation of Woodlarks, unless it be from their building in thickets, is difficult to say; since, like the common species, they are for the most part found only on large and cultivated plains.

Their song is stated more to resemble that of the nightingale than of the sky-lark. They sing not only in the day-time, but during the night; not only whilst they are in flight, but also when perched upon the trees. Like the sky-larks, they assemble in considerable flocks during frosty weather. Their usual food consists of small beetles, caterpillars, and other insects, as well as of the seeds of numerous kinds of wild plants.

THE GRASSHOPPER LARK*.

Nothing, says the Rev. Mr. White, can be more

* DESCRIPTION. This is a very small species. Its bill is slender and dusky. The upper parts of the body are of a

amusing than the sibilous whisper of this little bird, which seems to be close by, though it may be an hundred yards distant; and, when close at your ear, is scarcely any louder than when a great way off. The Grasshopper Lark usually begins his note about the middle of April, and did we not know that the grasshopper insects are not yet hatched, it would not be easy to persuade one's self that the note uttered by this lark was in reality the note of a bird.

During the season of love, the male has great delight in uttering its song from some bush adjacent to its nest. Its warbling is extremely simple, but at the same time is sweet, and by no means inharmonious. These birds also sing during their flight.

They are artful little creatures, generally skulking in the thickest part of the bushes, and sometimes when concealed, singing at the distance of little more than a yard from any person. Mr. White, speaking of one of them, says, that, in order to find it, he was under the necessity of desiring a person to go on the other side of a hedge that it haunted. The bird even then ran before them, creeping like a mouse, for more than a hundred yards, through the bottom of the thorns, yet it could not be compelled to come into their sight. Yet this bird, early in a morning, and when undisturbed, would sing on the top of a twig, gaping and shivering its wings with great apparent delight.

The nest of the Grasshopper Lark is formed in some solitary place, and generally concealed under some green turf. The eggs are seldom more than five in number, and these are marked towards the large end

variegated greenish brown. The under parts are of a yellowish white, speckled irregularly on the neck and breast. The feathers of the wings and tail are of a palish dusky brown. The tail is long, and somewhat wedge-shaped.

SYNONYMS. *Alauda trivialis*. Linn.—L'Alouette Pipi. Buffon.

with brown. The young-ones are not unfrequently devoured by snakes.

Although these birds are able to perch on small twigs, yet their hinder claw, as in most of the other species, is of considerable length.

OF THE WARBLERS IN GENERAL*.

Most of these birds prey on insects. Some of them are gregarious, and migrate at the approach of the cold weather, to warmer climates. This is a very extensive tribe, containing in the whole above a hundred and seventy species, of which our own country boasts nearly twenty.

THE NIGHTINGALE†.

The Nightingale, though greatly and deservedly esteemed for the excellence of its song, is not remarkable for variety or richness of colours. It usually leaves us about the middle of September, in order, as it is supposed, to retire to the distant regions of Asia. This bird returns regularly in the first days of April, and about a month afterwards begins to construct its nest. The females hatch twice, and sometimes even three times, in the year.

It is very remarkable, that all the gay and brilliant birds of America should be entirely destitute of that pleasing power of song which gives so peculiar a charm

* The Warblers have a weak and slender bill; small and somewhat depressed nostrils; and the tongue cloven at the end. The exterior toe is joined beneath to the base of the middle one.

† DESCRIPTION. The length of the Nightingale is about six inches. The upper parts of the body are of a rusty brown colour, tinged with olive; the under parts are of a pale ash-colour, almost white at the throat and belly.

SYNONYMS. *Motacilla Luscinia*. Linn.—Le Rossignol. Buffon.—Bew. Birds, p. 199.

to the groves and fields of Europe. One of our most elegant poets has beautifully expressed the supposed superiority of our island in this respect:

Nor envy we the gaudy robes they lent
Proud Montezuma's realm, whose legions cast
A boundless radiance waving on the sun,
While Philomel is ours; while in our shades,
Through the soft silence of the list'ning night,
The sober-suited songstress trills her lay.

The Nightingale seems to have been fixed upon almost universally as the most exquisite of singing-birds; and this superiority it certainly may boldly challenge. One reason, however, of this bird's being more attended to than others is, the circumstance of its singing in the night.

Mr. Barrington kept a fine Nightingale for three years, during which time he paid particular attention to its song. Its tone was infinitely more mellow than that of any other bird; though at the same time, by a proper exertion, it could be excessively brilliant. When this bird *sang its song round*, in its whole compass, he observed sixteen different beginnings and closes; at the same time that the intermediate notes were commonly varied in their succession with so much judgment, as to produce a most pleasing variety. Another point of superiority in the Nightingale, is its continuance of song without a pause; which Mr. Barrington observed to be sometimes not less than twenty seconds. Whenever respiration, however, became necessary, it was taken with as much judgment as by an opera-singer.

In this place it may be remarked, that the nightingales in general, in a wild state, do not sing above ten weeks in the year; while those confined in a cage continue their song for nine or ten months; and a caged Nightingale sings much more sweetly than those which we hear abroad in the spring. The latter, as the bird-fanciers term it, are so *rank* that they seldom sing any thing but short and loud jerks; which, consequently,

cannot be compared to the notes of a caged bird, since the instrument is thus overstrained.

From the dissections of several birds made by Mr. John Hunter, at the request of the Hon. Daines Barrington, it appeared that, in the best singers, the muscles of the larynx were the strongest. Those in the Nightingale were stronger than in any other bird of the same size. When we consider the size of many singing birds, it is really amazing to what a distance their notes can be heard. It is supposed that the song of a Nightingale may be heard above half a mile, if the evening be calm.

Nightingales will adopt the notes of other birds; and they will even chaunt the stiff airs of a Nightingale-pipe. They may be instructed to sing by turns with a chorus, and to repeat their couplet at the proper time. Mr. Stackhouse, of Pendarvis in Cornwall, informs me that he has remarked of the Nightingale that it will modulate its voice to any given key: he says, if any person whistle a note, the bird will immediately try, in its strain, an unison with it. Nightingales may also be taught to articulate words. The sons of the emperor Claudius, according to Pliny, had some Nightingales that spoke Greek and Latin. But what that author subjoins is still more marvellous, that these birds prepared every day new expressions, and even of considerable length, with which they entertained their masters. The arts of flattery might work upon the understandings of young princes; but a philosopher like Pliny ought not to have credited such a story, nor to have published it under the sanction of his name. Several authors, accordingly, resting on the authority of the Roman naturalist, have amplified the marvellous tale. Gesner, among others, quotes a letter from a person of credit, (as he states,) who mentions two Nightingales belonging to an inkeeper at Ratisbon, which passed the night in discoursing, in German, on the political interests of Europe—on the events that had already happened, and on those that might be ex-

pected, and that afterwards actually took place. It is true that the author of the letter endeavours to render the story more probable, by telling us that the birds only repeated what they had heard from some officers or deputies of the diet, who frequented the tavern; but still the whole is so absurd as to merit no serious remark.

Nightingales are solitary birds; never associating in flocks, like many of the smaller birds, but hiding themselves in the thickest parts of hedges and bushes, and seldom singing but during the night.

The London bird-catchers catch Nightingales in net-traps, (somewhat larger than cabbage-nets,) the bottoms of which are surrounded with an iron ring. These are baited with meal-worms from bakers' shops; and ten or a dozen birds have sometimes been caught in a day by this means.

THE PENSILE WARBLER *.

The sagacity displayed by this bird in building and placing its nest, is truly remarkable. She does not fix it at the forking of the branches, as is usual with most other birds; but she suspends it to a kind of binders, which hang from tree to tree, but particularly from branches that bend over the rivers and deep ravines. The nest consists of dry blades of grass, the ribs of leaves, and exceedingly small roots, interwoven with

* **DESCRIPTION.** The Pensile Warbler is nearly five inches long. The bill is dusky; the head grayish black; and the back deep gray. Round the eye there is a white streak, and between that and the bill a range of yellow dots. The throat, neck, and breast, are yellow. The belly is white; and the sides of the neck and body are dotted with black spots. The wing-coverts are white and black, in bands. The tail is dark gray, having the four outer feathers marked with large spots of white.

SYNONYMS. *Motacilla Pensilis.* *Linnaeus.*—Cou-jaune. *Buff.*
—Pensile Warbler. *Latham.*

great art; it is fastened on, or rather it is worked into the pendent strings. It is in fact a small bed, rolled into a ball, so thick and compacted as to exclude the rain; and it rocks in the wind without receiving any injury.

But the elements are not the only enemies against which this bird has to struggle; with wonderful sagacity it provides for the protection of its nest from other accidents. The opening is neither made on the top nor the side of the nest, but at the bottom. Nor is the entrance direct. After the bird has made its way into the vestibule, it must pass over a kind of partition, and through another aperture, before it descends into the abode of its family. This lodgment is round and soft; being lined with a species of lichen, which grows on the trees, or with the silky down of plants.

The birds of this species have a very delicate song, which is continued throughout the year. They are natives of St. Domingo, and some other of the West Indian islands, where they feed chiefly on insects and fruit.

THE COMMON WAGTAIL*.

These active and lively little birds run about the sides of ponds and small streams, in search of insects and worms; and in the spring and autumn are constant attendants on the plough, for the sake of the worms thrown up by that instrument.

The generality of the Wagtails disappear in the autumn; but how they dispose of themselves during the winter, is somewhat difficult to account for. They are often to be seen even in the middle of winter. If there happen to be a fine day, and the sun shine bright, they

* SYNONYMS. *Motacilla alba*. *Linn.*—Lavandier. *Buff.*—White Wagtail. *Pennant.*—Black and White Water-Wagtail, Pied Wagtail. *Bewick.*—*Bew. Birds.* p. 188.—*Penn. Brit. Zool.* vol. i. tab. 54.

are sure to make their appearance; chirping briskly, and seeming delighted with the fine weather, though they had not perhaps been seen for three weeks or a month before. Whence then do they come? Certainly not from a far distant country, there not being time for a very long journey in the space of a single day; and, besides, they never seem to be tired or lifeless, but are very brisk and lively on such occasions.

THE WHEAT-EAR*.

This bird visits England annually in the middle of March, and leaves us in September. The females come first, about a fortnight before the males; and they continue to come till the middle of May. In some parts of England they are found in great numbers, and are much esteemed for the table. About Eastbourn, in Sussex, they are caught by means of snares made of horse-hair, placed beneath a long turf. Being very timid birds, the motion even of a cloud, or the appearance of a hawk, will immediately drive them into the traps. These traps are first set every year on St. James's day, the twenty-fifth of July; soon after which they are caught in astonishing numbers, considering that they are not gregarious, and that more than two or three are scarcely ever seen flying together. The number annually ensnared in the district of Eastbourn

* **DESCRIPTION.** The head and back of the male are of a light gray, tinged with red. Over each eye there is a white line: beneath that is a broad black stroke, which passes across each eye to the hinder part of the head. The rump and lower half of the tail are white: the upper half black. The underside of the body is white, tinged with yellow: on the neck this colour inclines to red. The quill-feathers are black, edged with reddish brown. The colours of the female are more dull: this sex wants the black mark across the eyes; and the bar of white on the tail is narrower than that in the male. *Pennant.*

SYNONYMS. *Motacilla Oenanthe.* *Linn.*—Cul-blanc, ou Vitrec, ou Motteux. *Buffon.*—Fallow-smich, White-tail. *Willughby.*—White-rump. *Bewick.*—*Bew. Birds*, p. 229.

alone, is said to amount to nearly two thousand dozen. The birds caught are chiefly young ones, and they are invariably found in the greatest number when an easterly wind prevails: they always come against the wind. A gentleman informed Mr. Markwick of Cattsfield, that his father's shepherd once caught eighty-four dozen of them in a day. Great quantities of Wheat-eats are eaten on the spot by the inhabitants; others are picked, and sent to the London poulterers; and many are potted, being as much esteemed in England, as the ortolans are on the continent.

The vast abundance of these birds on the downs about Eastbourn, is supposed by Mr. Pennant to be occasioned by a species of fly, their favourite food, that feeds on the wild thyme, and abounds on the adjacent hills.

A few of the birds breed in the old rabbit-burrows there. Their nest is large, and made of dried grass, rabbits' down, a few feathers, and horse-hair. The eggs are from six to eight in number, and of a light colour.

THE RED-BREAST*.

The Red-breast has usually been reckoned among the birds of passage; but, as M. de Buffon has elegantly expressed himself, the departure in the autumn "not being proclaimed among the Red-breasts, as among other birds at that season collected into flocks, many stay behind; and these are either the young and inexperienced, or some which can derive support from the slender resources of the winter. In that season they visit our dwellings, and seek the warmest and most sheltered situations; and, if any one happens still to

* **SYNONYMS.** *Motacilla Rubecula.* *Linn.*—Le Rouge-gorge. *Buff.*—Robin Red-breast or Ruddock. *Willughby.*—*Bew. Birds*, p. 204.

continue in the woods, it becomes the companion of the faggot-maker, cherishes itself at his fire, pecks at his bread, and flutters the whole day round him, chirping its slender *pip*. But, when the cold grows more severe, and thick snow covers the ground, it approaches our houses, and taps at the window with its bill, as if to entreat an asylum, which is cheerfully granted; and it repays the favour by the most amiable familiarity, gathering the crumbs from the table, distinguishing affectionately the people of the house, and assuming a warble, not indeed so rich as that in the spring, but more delicate. This it retains through all the rigours of the season; to hail each day the kindness of its host, and the sweetness of its retreat. There it remains tranquil, till the returning spring awakens new desires, and invites to other pleasures: it now becomes uneasy, and impatient to recover its liberty."

The Red-breast generally builds its nest among the roots of trees, in some concealed spot near the ground. This is composed of dried leaves, mixed with hair and moss, and lined with feathers. The female lays from five to seven eggs. In order the more successfully to conceal its nest, we are told that it covers it with leaves, suffering only a narrow winding entrance under the heap to be left.

This bird feeds principally on insects and worms; and its skill in preparing the latter is somewhat remarkable. It takes a worm by one extremity, in its beak, and beats it on the ground till the inner part comes away. Then seizing it in a similar manner by the other end, it entirely cleanses the outer part, which alone it eats.

The general familiarity of this bird has obtained for it a peculiar denomination in several countries. The inhabitants of Bornholm call it *Tommi Liden*; the Norwegians, *Peter Ronsmad*; the Germans, *Thomas Gierdet*; and we give to it the familiar appellation of *Robin Red-breast*.

THE WREN*.

The Wren is found throughout Europe. Its nest is curiously constructed, chiefly of moss, and lined with feathers: in shape it is almost oval, with only one small entrance. This nest is generally found in some corner of an out-house, stack of wood, or hole in a wall, near our habitations; but when the Wren builds in woods, it generally does this in some bush near the ground, on the stump of a tree, or even on the ground. The female lays from ten to eighteen eggs. The materials of the nest are generally adapted to the place where it is formed. If against a hay-rick, its exterior is composed of hay: if against the side of a tree clad with white lichens, it is covered with that substance; and, if built against a tree covered with green moss, or in a bank, its exterior bears a similar correspondence. The lining is invariably of feathers. The Wren does not, as is usual with most other birds, begin the bottom of its nest first. When against a tree, its primary operation is to trace upon the bark, the outline, and thus to fasten it with equal strength to all parts. It then, in succession, closes the sides and top, leaving only a small hole for entrance. If the nest be placed under a bank, the top is first begun, and is well secured in some small cavity; and by this the fabric is suspended.

The song of the Wren is much admired; being a pleasing warble, and louder than could be expected from the size of the bird. This it continues throughout the year: these birds have been heard to sing unconcerned even during a fall of snow. They also sing very late in the evening; though not, like the nightingale, after dark.

* SYNONYMS. *Motacilla Troglodytes*. Linn.—Troglodyte. Buff.—Kitty Wren. Bewick.—Bew. Birds, p. 227.

THE GOLDEN-CRESTED WREN*.

The song of this beautiful little bird, the smallest of all the British feathered race, is extremely delicate and pleasing. It is not much unlike, but is not quite so loud as, that of the Common Wren. The Golden-crested Wren may be easily known in winter by its shrill squeak, somewhat resembling the crinkling of a grasshopper. Except in the frosts, it continues its song during the whole year. These birds are very agile: they are almost continually in motion, fluttering from branch to branch, creeping on all sides of the trees, clinging to them in every situation, and often hanging with their backs downward, in the manner of the titmice.

Their food consists chiefly of minute insects, which they find in the crevices of the bark of trees, or catch nimbly on the wing. They also eat the eggs of insects, small worms, and various kinds of seeds. They delight to frequent the largest trees, such as oaks, elms, and firs.

The nest of the Golden-crested Wren is an interesting fabric. It somewhat resembles that of the chaffinch; and is frequently formed amongst the leaves at the tip of the branch of a fir-tree, where it swings about, in high winds, like a pendulum. It is oval, very deep, and has a small hole near the middle, for the ingress and egress of the bird. The materials composing its exterior are different species of moss; and with-

* DESCRIPTION. The head and upper part of the body of this Wren, are of a deep reddish brown: above each eye there is a stroke of white: the back, and the coverts of the wings and tail, are marked with slender transverse black lines; the quill-feathers with bars of black and red. The throat is of a yellowish white. The belly and sides are crossed with narrow dusky and pale reddish-brown lines. The tail is crossed with dusky bars. *Pennant.*

SYNONYMS. *Motacilla regulus. Lin.—Le Roitelet. Buff.*

in, it is lined with wool, hair, and feathers. The female lays from ten to eighteen eggs, and not unusually brings up as many young-ones. "It may be ranked among those daily miracles of which we take no notice, that this bird should feed so great a number as this without passing over one, and that also in utter darkness." The eggs are, in size, scarcely larger than peas, and are of a white colour, sprinkled with small dull spots.

These birds are found in various parts, not of Europe only, but also of Asia and America. They are said to bear well every change of temperature, from the greatest degree of heat to that of the severest cold. They continue with us during the whole year: but Mr. Pennant states that they cross annually from the Orkneys to the Shetland islands, where they breed, and from which they return before the winter. This is a long flight (sixty miles) for so small a bird.

THE WILLOW-WREN*.

The Willow-wren is not uncommon in many parts of England. It is migratory, visiting us usually about the middle of April, and taking its departure towards the end of September. The females construct their nests in holes at the roots of trees, in hollows of dry banks, and other similar places. These are round, and not unlike the nest of the wren. The eggs are dusky white, marked with reddish spots; and are five in number.

* **DESCRIPTION.** This bird is somewhat larger than the common Wren. The upper parts of the body are of a pale olive-green; the under parts are pale yellow, and a streak of yellow passes over the eyes. The wings and tail are brown, edged with yellowish green; and the legs are yellowish.

SYNONYMS. *Motacilla Trochilus.* *Lin.*—Bouillot, ou Chantre. *Buff.*—Small Yellow Bird. *Ray.*—Green Wren. *Albin.*—Yellow Wren. *Penn.*

A Willow-wren had built in a bank of one of the fields of Mr. White, near Selborne. This bird a friend and himself observed, as she sat in her nest; but they were particularly careful not to disturb her, though she eyed them with some degree of jealousy. Some days afterwards, as they passed the same way, they were desirous of remarking how the brood went on; but no nest could be found, till Mr. White happened to take up a large bundle of long green moss, which had been thrown as it were carelessly over the nest, in order to mislead the eye of any impertinent obtruder.

The Willow-wren may justly be termed the Nightingale of the northern snowy countries of Europe. It settles on the most lofty branches of the birch-trees, and makes the air resound with its bold and melodious song.

THE TAILOR-BIRD*.

The nest of the Tailor-bird is a very remarkable production. Its exterior is constructed of two leaves; the one generally dead, which the bird fixes, at the end of some branch, to the side of a living one, by sewing both together with little filaments, in the manner of a pouch or purse, and open at the top. In this operation the bill of the bird serves as a needle. Sometimes, instead of a dead leaf and a living one, two living leaves are sewed together; and, thus connected, they seem rather the work of human art than of an uninstructed animal. After the operation of sewing is finished, the cavity is lined with feathers and soft vegetable down. The

* DESCRIPTION. This, like the last two, is a very small species, measuring scarcely more than three inches in length. Its colour is entirely yellow.

It is a native of India.

SYNONYMS. *Motacilla Sutoria*. Linn.—Taylor Bird. Latham.

nest and birds are together so extremely light, that the leaves of the most exterior and slender twigs of the trees are chosen for the purpose; and, thus situated, the brood is completely secured from the depredations of every invader.

OF THE TITMICE IN GENERAL*.

This is a diminutive but sprightly race of birds; possessed both of courage and strength. Their general food consists of seeds, fruit, and insects; and a few of them eat flesh. Some of them will venture to assault birds that are twice or thrice their own bulk; and, in this case, they direct their aim chiefly at the eyes. They often seize upon birds that are weaker than themselves: these they kill, and, having picked a hole in the skull, eat out the brain. They are very prolific, laying eighteen or twenty eggs at a time. Their voice is, in general, unpleasant.

THE PENDULINE TITMOUSE†, AND CAPE TITMOUSE.

In the construction of their nests, the Penduline Titmice employ chiefly the light down of the willow,

* The bill is straight, strong, hard, sharp-pointed, and a little compressed. The nostrils are round, and covered with bristles. The tongue appears as if cut off at the extremity, and is terminated by three or four bristles. The toes are divided to their origin; and the back toe is very large and strong.

† DESCRIPTION. These birds are about four inches and a half in length. The fore part of the head is whitish, and the hind part and the neck are ash-coloured. The upper parts of the plumage are gray; the forehead is black; the throat and the front of the neck are of a very pale ash-colour; and the rest of the under parts are yellowish. The quills and tail are brown, edged with white; and the legs are reddish gray.

SYNONYMS. *Parus Pendulinus*. Linn.—Mésange de Pologne, ou Remiz. Buff.—Mountain Titmouse. Albin.

the poplar, and the aspen; or of thistles, dandelions, and other flowers. With their bill they entwine these filamentous substances, and form a thick, close web, almost like cloth: this they fortify externally with fibres and small roots, which penetrate into the texture, and in some measure compose the basis of the nest. They line the inside with down, but not woven, in order that their offspring may lie soft. They close the nest above, for the purpose of confining the warmth; and they suspend it with hemp, nettles, &c. from the cleft of a small pliant branch, (over some stream,) that it may rock more gently, assisted by the spring of the branch. In this situation the brood are well supplied with insects, which constitute their chief food; and they are also thus protected from their enemies. The nest sometimes resembles a bag, and sometimes a short purse. The aperture is made in the side, is nearly round, not more than an inch and a half in diameter, and commonly surrounded by a brim more or less protuberant.

These nests are seen in great numbers in the fens of Bologna, and in those of Tuscany, Lithuania, Poland, and Germany. The peasants regard them with superstitious veneration: one of them is usually suspended near the door of each cottage; and the possessors esteem it a defence against thunder, and its little architect as a sacred bird. The Penduline Titmouse frequent watery places, for the sake of aquatic insects, on which they feed.

*The Cape Titmouse** constructs its nest of the down of a species of asclepias. This luxurious nest is made of the texture of flannel, and equals fleecy-hosiery in softness. Near the upper end projects a small tube, about an inch in length, with an orifice about three-fourths of an inch in diameter. Immediately under the

* SYNONYMS. *Parus Capensis*. Linn.—Pctit Deuil. Buff.
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tube is a small hole in the side, that has no communication with the interior of the nest: in this hole, the male sits at night, and thus both male and female are screened from the weather.

THE BLUE TITMOUSE *.

This busy little bird is frequently seen in our gardens and orchards, where its operations are much dreaded by the over-anxious gardener, who fears, lest, in pursuit of its favourite food, which is often lodged in the tender buds, it may destroy them also, to the injury of his future harvest: not considering that the Titmouse is the means of destroying a much more dangerous enemy (the caterpillar) which it finds there. It has likewise a strong propensity to flesh. This bird is distinguished above all the rest of the Titmice by its rancour against the owl. The female builds her nest in the holes of walls or trees, which it lines well with feathers; she lays from fourteen to twenty white eggs. If her eggs be touched by any person, or one of them be broken, she immediately forsakes her nest and builds again, but otherwise she has but one hatch in the year.

OF THE SWALLOWS IN GENERAL †.

Swallows are easily distinguished from all other birds, not only by their general structure, but by their

* **DESCRIPTION.** The bill is short and dusky. The crown of the head is of a fine blue colour. From the bill to the eyes there is a black line. The forehead and cheeks are white. The back is of a yellowish green; and the lower side of the body yellow. The wings and tail are blue, the former marked transversely with a white bar. The legs are lead-coloured.

SYNONYMS. *Parus cœruleus.* *Linn.*—*Le Mesange bleue.* *Buff.*—Tom-tit, Blue-cap, and Nun, in various parts of England.

† The bill of the Swallow is short, broad at the base, small

twittering voice, and their manner of life. They fly with great rapidity, seldom walk, and perform all their functions either on the wing or sitting. By means of their wide mouth they easily catch insects in the air, or on the surface of the water; and on these they subsist.

Naturalists have been much divided in their opinions respecting the migration of the Swallow tribe from this country. This is a subject into which, if I were to enter at length, I should not only occupy too many pages of the present work, but should also trespass too much both on the time and patience of the reader: I shall therefore be very brief in my account of it.

The Hon. Daines Barrington, and several other writers, have supposed that *swallows* do not leave this country; but that, during winter, they lie concealed, and in a torpid state, under water: that the *martins* lie concealed during the same time in crevices of rocks, and other lurking-places above-ground; that the *sand-martins* remain in the holes where they form their nests: and that the *swifts* continue all winter in their holes in churches and old buildings. That there have been many well-authenticated instances of the birds being found torpid in each of the situations, both here and in other countries, cannot be denied. But a migration of the major part of these birds is not to be contradicted, by what seems to be rather the effect of chance than design. Those birds that have been late hatched, and have not acquired sufficient strength to accompany their companions in their journey, may alone have supplied the above-mentioned instances. Were the whole of these species to remain, we should

at the point, and somewhat bent. The nostrils are open. The tongue is short, broad, and cloven. The tail, except in one species, is forked; and the wings are long. The legs are short, and (except in four species, in which they are all placed forward) the toes are placed three before and one behind.

undoubtedly, since their numbers are immense, be supplied with more numerous and more generally known instances of the fact than have hitherto been recorded. Mr. John Hunter, on dissecting several Swallows, observed in them nothing differing from other birds in the organs of respiration; and immediately concluded, perhaps without considering the very respectable names that appear as witnesses in instances to the contrary, that it is highly absurd to suppose that *any* of them could remain for a long time under water. That the actual migration of the Swallow tribe does, however, take place, has been fully proved from a variety of well-attested facts; most of which have been taken from the observations of navigators who were eye-witnesses of their flights, and whose ships have sometimes afforded to them resting-places in their toilsome journeys.

A single instance is recorded of some Swallows having, with warmth and care, been preserved alive through the winter. This fact was mentioned by a Mr. Pearson of London, who, on the 14th of February, 1786, exhibited them to a Society for Promoting Natural History. These birds, however, died from neglect in the ensuing summer.

THE CHIMNEY SWALLOW*.

During the summer months this Swallow takes up its residence in England, building its nest generally in the insides of our chimneys, a few feet from the top. This nest is composed of mud mixed with straw and hair, and lined with feathers. It lays four or five eggs, and has two broods in the year.

The progressive method by which the young-ones are introduced to their proper habits, is very curious.

* SYNONYMS. *Hirundo rustica*. Linn.—Hirondelle de Cheminée, ou Hirondelle Domestique. Buff.—House or Chimney Swallow. Penn.—Bew. Birds, p. 252. Penn. Brit. Zool. vol. i. tab. 56.

They first, but not without some difficulty, emerge from the shaft: for a day or two they are fed on the chimney-top; and then are conducted to the dead, leafless bough of some neighbouring tree, where, sitting in a row, they are attended by the parents with great assiduity. In a day or two after this, they are strong enough to fly, but they continue still unable to take their own food. They therefore play about near the place, where the dams are watching for flies; and, when a mouthful is collected, at a certain signal, the dam and the nestling advance, rising towards each other, and meeting at an angle; the young-one all the while uttering such a short quick note of gratitude and complacency, that a person must have paid very little regard to the wonders of nature, who has not remarked this scene.

As soon as the dam has disengaged herself from the first brood, she immediately commences her preparations for a second, which is introduced into the world about the middle or latter end of August.

During every part of the summer, the Swallow is a most instructive pattern of unwearied industry and affection: from morning to night, while there is a family to be supported, she spends the whole time in skimming along, and exerting the most sudden turns and quick evolutions: avenues, and long walks under hedges, pasture-fields, and mown meadows where cattle graze, are her delight, especially if there are trees interspersed, because in such spots insects most abound. When a fly is taken, a smart snap from her bill is to be heard, not unlike the noise of the shutting of a watch-case; but the motion of the mandibles is too quick for the eye.

The Swallow is the excubitor to the house-martins and other little birds, announcing the approach of birds of prey: for as soon as a hawk or an owl appears, the Swallow calls, with a shrill alarming note, all his own fellows and the martins about him; who pursue in a body, and strike their enemy till they have driven him

from the place, darting down upon his back, and rising in a perpendicular line in perfect security. This bird will also sound the alarm, and strike at cats when they climb on the roofs of houses, or otherwise approach the nests.

Wonderful is the address, Mr. White justly observes, which this adroit bird exhibits in ascending and descending with security through the narrow passage of a chimney. When hovering over the mouth of the funnel, the vibrations of its wings acting on the confined air, occasion a rumbling like distant thunder. It is not improbable that the dam submits to the inconvenience of having her nest low down in the shaft, in order to have her broods secure from rapacious birds; and particularly from owls, which are frequently found to fall down chimneys, probably in their attempts to get at the nestlings.

Swallows are generally supposed to retire in the winter to Senegal, and some other parts of Africa. Dr. Russel says, that they visit the country about Aleppo towards the end of February; where, like those in Europe, they breed. Having hatched their young-ones, they disappear about the end of July; and, returning in the beginning of October, continue somewhat more than a fortnight, and then disappear till the spring. They are found in almost all parts of the Old Continent, and are by no means uncommon in North America.

Professor Kalm, in his Travels into America, says, that a very reputable lady and her children related to him the following story respecting these birds, assuring him at the same time that they were all eye-witnesses to the fact:—"A couple of Swallows built their nest in the stable belonging to the lady; and the female laid eggs in the nest, and was about to brood them. Some days afterwards the people saw the female still sitting on the eggs; but the male flying about the nest, and sometimes settling on a nail, was heard to utter a very plaintive note, which betrayed his uneasiness. On a

nearer examination, the female was found dead in the nest; and the people flung her body away. The male then went to sit upon the eggs; but after being about two hours on them, and perhaps finding the business too troublesome, he went out, and returned in the afternoon with another female, which sat upon the nest, and afterwards fed the young-ones, till they were able to provide for themselves."

At Camerton Hall, near Bath, a pair of Swallows built their nest on the upper part of the frame of an old picture, over the chimney-piece; entering through a broken pane in the window of the room. They came three years successively; and in all probability would have continued to do so, had not the room been put in repair, which prevented their access to it.

Another pair were known to build for two successive years on the handles of a pair of garden shears, that were stuck up against the boards in an outhouse; and therefore must have had their nest spoiled whenever the implement was wanted. And what is still more strange, a bird of the same species built its nest on the wings and body of an owl, that happened to hang dead and dry from the rafter of a barn, and so loose as to be moved by every gust of wind. This owl, with the nest on its wings, and with eggs in the nest, was taken as a curiosity to the museum of Sir Ashton Lever. That gentleman, struck with the singularity of the sight, furnished the person who brought it with a large shell, desiring him to fix it just where the owl had hung. The man did so; and in the following year a pair of Swallows, probably the same, built their nest in the shell, and laid eggs.

"By the myriads of insects," says a writer in the *Gentleman's Magazine*, "which every single brood of Swallows destroy, in the course of a summer, these birds defend us in a great measure from the personal and domestic annoyance of flies and gnats; and what is of infinitely more consequence, they keep down the numbers of our minute enemies, which, either in the

Grub or winged state, would otherwise prey on the labours of the husbandman. Since, then, Swallows are guardians of our corn, they should every where be protected by the same popular veneration which in Egypt defends the ibis, and in Holland the stork. We more frequently hear of unproductive harvests on the Continent than in this country; and it is well known that Swallows are caught and sold as food, in the markets of Spain, France, and Italy. When this practice has been very general and successful, I have little doubt that it has, at times, contributed to a scarcity of corn. In England, we are not driven to such resources to furnish our tables. But what apology can be made for those, and many there are, whose education and rank should have taught them more innocent amusements, but who wantonly murder Swallows, under the idle pretence of improving their skill in shooting game? Besides the cruelty of starving whole nests by killing the dam, they who follow this barbarous diversion would do well to reflect, that by every swallow they kill, they assist the effects of blasts, mildews, and vermin, in causing a scarcity of bread. Every lord of a manor should restrain his game-keeper from this execrable practice; nor should he permit any person to sport on his lands who does not refrain from it. For my part, I am not ashamed to own, that I have tempted martins to build round my house, by fixing scallop-shells in places convenient for their 'pendent beds and procreant cradles;' and I have been much pleased in observing with what caution the little architect raises a buttress under each shell, before he ventures to form his nest on it.

All the birds of this tribe have been observed to drink as they fly along, sipping the surface of the water; but the Swallow alone, in general, washes on the wing, by dropping into a pond many times successively. In very hot weather, house-martins and bank-martins also sometimes dip and wash.

Swallows feed on small beetles, as well as on gnats

and flies; and often settle on dug ground or paths, for gravel, which assists in grinding and digesting their food. Horsemen, on wide downs, are often closely attended, for miles together, by a small party of Swallows; which play before and behind them, sweeping around, and collecting all the insects that are roused by the trampling of the horse's feet. When the wind blows hard, the birds, without this expedient, are often forced to alight, in order to pick up their lurking prey.

Mr. White informs us, that for some weeks before the Swallows depart, they (without exception) forsake houses and chimneys, and roost in trees; and that they usually withdraw about the beginning of October, though some few stragglers may be seen at times till the first week in November. A few days previously to their departure, they assemble in vast flocks on house-tops, churches, and trees, from which they take their flight.

I shall conclude the account of this bird with an anecdote related by M. de Buffon. This celebrated writer informs us, that a shoemaker in Basle put a collar on a Swallow, containing an inscription to this purport:

“ Pretty Swallow, tell me, whither goest thou in winter?”

and in the ensuing spring he received, by the same courier, the following answer:

“ To Anthony at Athens:—Why dost thou inquire?”

The most probable conjecture on this story is, that the answer was written by some one who had caught the bird in Switzerland; for both Belon and Aristotle assure us, that though the Swallows live half the year in Greece, yet they always pass the winter in Africa.

The Rev. Revett Shepperd, F. L. S. a few years ago communicated to me the following account of a Swallow which was domesticated by Miss Boldero of Ixworth,

near Bury St. Edmund's: "On the 19th of July, 1806, three young Swallows fell down the chimney of this lady's bed-chamber, and, being fond of birds, she determined, if possible, to rear them. Two of them died in the course of a week, but the third, by feeding it with boiled egg, mixed occasionally with bread, she succeeded in rearing. It grew fast, and continued in excellent health. As flies were its most natural food, she supplied it with these as frequently as possible. It drank plentifully of water, and seemed to derive great pleasure from regularly washing itself. This bird grew so tame that it would come to its mistress whenever she held out her finger for it to alight upon; and thus perched, would catch every fly within its reach. Its eagerness in this act, and its manner of catching these insects; the snap of its beak in so doing, and its general docility, rendered it a very amusing and interesting object. Frequently after dinner, Miss Boldero would bring it upon her finger into the dining-room, a large and lofty apartment. Here it would fly about with great freedom; and, when tired, would come to its mistress to rest itself upon her. It did not appear to notice a small parrot, which was loose in the same room, and upon the perches of whose stand it was fond of alighting. If, however, the parrot attempted to attack it, the Swallow always opened its beak in a threatening manner, as if resolved to defend itself from insult."

"When the usual term for the migration of its tribe approached, this bird became uneasy; and, as it was occasionally hung in a cage on the outside of the house, the other Swallows came about it, and appeared to invite it to go with them. The Swallows, so long as any remained, came every day to it; and when they had all disappeared it became tolerably tranquil. Miss Boldero was extremely anxious to preserve it through the winter, and though aware of the difficulty she should have in feeding it through that season, resolved to make the attempt. On the 9th of October, however, after she had fed it as usual, and had left it in apparent

health and vigour, she had the mortification, on returning to her chamber; to find it dead. The cause of its death she was unable to ascertain; but she imagined that the bird might have been inadvertently struck by the servant, whilst she was cleaning the room."

THE MARTIN *.

About the 16th of April these birds begin to appear, and generally for some time they pay no attention to the business of nidification, but play and sport about, either to recruit themselves from the fatigue of their journey, or else that their blood may recover its true tone and texture, after having been so long benumbed by the severities of the winter. Towards the middle of May, if the weather be fine, the Martin begins to think of providing a mansion for its family. The crust or shell of its nest seems to be formed of such dirt or loam as is most readily met with; and it is tempered and wrought together with little pieces of broken straws, to render it tough and tenacious.

As this bird often builds against a perpendicular wall, without any projecting ledge under, its utmost efforts are necessary to get the first foundation firmly fixed, so as to carry safely the superstructure. On this occasion the bird not only clings with its claws, but partly supports itself by strongly inclining its tail against the wall, making that a fulcrum; and, thus fixed, it plasters the materials into the face of the brick or stone. But that this work may not, while soft, incline down by its own weight, the provident architect has the prudence and forbearance not to proceed too fast; but, by building only in the morning, and dedicating the rest of the day to food and amusement, she gives it sufficient time to

* SYNONYMS. *Hirundo urbica*. *Linnaeus*.—Hirondelle à Croupion blanc, ou de Fenêtre. *Buffon*.—Martin, Martlet, Martinet. *Willughby*.—Window Swallow. *Bewick*.—House Martin. *Montague*.—*Bew. Birds*. p. 255.

dry and harden. About half an inch seems to be a sufficient layer for a day. Thus, careful workmen, when they build mud-walls, (informed at first, perhaps, by this little bird,) add but a moderate layer at a time, and then desist, lest the work should become top-heavy, and so be ruined by its own weight. By this method, in about ten or twelve days, a hemispherical nest is formed, with a small aperture towards the top; strong, compact, and warm, and perfectly fitted for all the purposes for which it was intended. But nothing is more common than for the House-sparrow, as soon as the shell is finished, to seize on it, eject the owner, and to line it according to its own peculiar manner. After so much labour is bestowed in erecting a mansion, as Nature seldom works in vain, Martins will breed for several years successively in the same nest, where it happens to be well sheltered and secured from the injuries of the weather. The shell or crust of the nest is a sort of rustic work, full of knobs and protuberances on the outside: nor is the inside smoothed with any great exactness; but it is rendered soft and warm, and fit for incubation, by a lining of small straws, grasses, and feathers, and sometimes by a bed of moss interwoven with wool.

In this nest are produced four or five young ones; which, when arrived at full growth, become impatient of confinement, and sit all day with their heads out at the orifice, where the dams, by clinging to the nest, supply them with food from morning to night. After this they are fed on wing by the parents; but this feat is performed by so quick and almost imperceptible a flight, that a person must attend very exactly to the motions of the birds, before he is able to perceive it.

As soon as the young-ones are able to provide for themselves, the dams repair their nest for a second brood. The first flight then associate in vast flocks; and may be seen on sunny mornings and evenings, clustering and hovering around towers and steeples, and on the roofs of churches and houses. These congregations

usually begin to take place about the first week in August. From observing the birds approaching and playing about the eaves of buildings, many persons have been led to suppose that more than two old birds attend on each nest.

The Martins are often very capricious in fixing on a nesting-place, beginning many edifices, and leaving them unfinished ; but (as we have before observed) when a nest has once been completed in a sheltered situation, it is made to serve for several seasons. In forming their nests, these industrious artificers are at their labour, in the long days, before four o'clock in the morning : in fixing their materials, they plaster them on with their chins, moving the head with a quick vibratory motion.

Sometimes, in very hot weather, they dip and wash themselves as they fly, but not so frequently as the swallows. They are the least agile of all the British hirundines ; their wings and tails are short, and therefore they are not capable of those surprising turns, and quick and glancing evolutions, that are so observable in the chimney-swallows.

Their motion is placid and easy : generally in the middle region of the air ; for they seldom mount to any great height, and never sweep long together over the surface of the ground or water. They do not wander far in quest of food ; but are fond of sheltered places near some lake, or under some hanging wood, especially in windy weather.

They breed the latest of all our swallows, never being without unfledged young-ones even so late as Michaelmas.

As the summer declines, the flocks every day increase in number, from the accession of the second broods ; till at length, round the villages on the Thames, they swarm in myriads, darkening even the face of the sky, as they frequent the aits of that river, where they roost. The majority of them retire in vast companies, about the beginning of October ; but some have been known to remain so late as till the sixth of November. It would

seem that either these are very short-lived birds, or that they undergo vast destruction in their absence, or do not return to the districts where they were bred; for the numbers that appear in the spring, bear no proportion to those that retired in the preceding year.

During the residence of a Mr. Simpson, at Welton in North America, he one morning heard a noise from a couple of Martins that were flying from tree to tree near his dwelling. They made several attempts to get into a box or cage which was fixed against the house, and which they had before occupied; but they always appeared to fly from it again with the utmost dread, at the same time repeating those loud cries which first drew his attention. Curiosity led this gentleman to watch their motions. After some time, a small wren* came from the box, and perched on a tree near it; when her shrill notes seemed to amaze her antagonists. Having remained a short time, she flew away. The Martins took this opportunity of returning to the cage; but their stay was short. Their diminutive adversary entered, and made them retire with the greatest precipitation. They continued manœuvring in this way, during the whole day, but on the following morning, when the wren quitted the cage, the Martins immediately returned, took possession of their mansion, broke up their own nest, went to work afresh with extreme industry and ingenuity, and soon barricadoed their doors. The wren returned, but could not now re-enter. She made attempts to storm the nest, but did not succeed. The Martins, abstaining from food nearly two days, persevered during the whole of that time in defending the entrance; and the wren, finding she could not force the works, raised the siege, quitted her intentions, and left the Martins in quiet possession of their dwelling.

Probably *Certhia familiaris* of Linnæus.

THE SAND-MARTIN*.

In the banks of rivers, and in the perpendicular sides of sand-pits, these birds dig round and regular holes, about two feet in depth, which run horizontally, and in a somewhat serpentine direction. At the further end of these burrows, the birds construct their rude nest of grass and feathers. "Though one would at first be disinclined to believe (says Mr. White) that this weak bird, with her soft tender bill and claws, should ever be able to bore the stubborn sand-bank without entirely disabling herself; yet with these feeble instruments have I seen a pair of them make great dispatch; and could remark how much they had scooped in a day, by the fresh sand which ran down the bank, and which was of a different colour from what lay loose and had been bleached in the sun. In what space of time the little artists are able to mine and finish these cavities, I have never been able to discover; but it would be a matter worthy of observation, where it falls in the way of any naturalist to make such remarks. This I have often taken notice of, that several holes of different depths are left unfinished at the end of the summer. To imagine that these beginnings were intentionally made, in order to be in the greater forwardness for the ensuing spring, is allowing perhaps too much foresight to a simple bird. May not the cause of their being left unfinished, arise from the birds meeting, in those places, with strata too harsh, hard, and solid, for their purpose; which they relinquish, and go to a fresh spot, where they can work more freely? Or may they not in other places fall in with a soil as much too loose and mouldering, liable to founder, and threatening to overwhelm them and their labours? One thing is remark-

* SYNONYMS. *Hirundo riparia.* Linn.—Hirondelle de Rivage. Buffon.—Shore Bird. Willughby.—Bank Martin, or Sand Swallow. Bewick.—*Bew. Birds*, p. 258.

able; that, after some years, the old holes are forsaken, and new ones are bored; perhaps because the former habitations were become foul and fetid from long use, or because they so abounded with fleas as to become untenable." Sand Martins are so strangely annoyed with fleas, that these vermin have been sometimes seen swarming at the mouths of their holes, like bees on the stools of their hives.

The Sand Martin appears in this country about the same time as the swallow, and lays from four to six white and semi-transparent eggs. These birds seem not to be of very sociable disposition: with us they never congregate in the autumn. They have a peculiar manner of flying: they flirt about with odd jerks and vacillations, not unlike the motions of a butterfly.

THE ESCULENT SWALLOW*.

The nest of this bird is exceedingly curious; and is composed of such materials, that it is not only edible, but is accounted by the epicures of Asia, among their greatest dainties. It generally weighs about half an ounce; and is, in shape, like a half-lemon, or, as some say, like a saucer with one side flatted, which adheres to the rock. The texture somewhat resembles isinglass, or fine gum-dragon: and the several layers of the component matter are very apparent; it being fabricated from repeated parcels of a soft, slimy substance, in the same manner as the martins form their nests of mud. Authors differ much as to the materials of which this nest is composed: some suppose it to consist of

* See Plate xv. Fig. 5.

DESCRIPTION. The Esculent Swallow is somewhat smaller than the wren. Its bill is thick. The upper parts of the body are brown, and the under parts whitish. The tail is forked; and each feather is tipped with white. The legs are brown.

SYNONYMS. *Hirundo esculenta.* Linn.—*Salangane.* Buff.

sea-worms of the *Mollusca* class; others, from the sea-qualm, (a kind of cuttle-fish,) or a glutinous sea-plant, called *agal-agal*. It has also been supposed that the swallows rob other birds of their eggs, and, after breaking their shells, apply the white of them in the composition of these structures.

The best sort of nests, which are perfectly free from dirt, are dissolved in broth, in order to thicken it; and are said to give it an exquisite flavour. Or they are soaked in water, to soften them; then pulled to pieces; and, after being mixed with *ginseng*, are put into the body of a fowl. The whole is afterwards stewed in a pot, with a sufficient quantity of water, and left on the coals all night. On the following morning it is in a state to be eaten.

These nests are found in vast numbers in certain caverns of islands in the Soolo Archipelago. The best kind sell in China at from one thousand to fifteen hundred dollars the *picle*; (about twenty-five pounds;) the black and dirty ones for only twenty dollars. It is said that the Dutch alone export from Batavia one thousand *picles* of these nests every year: they are brought from the islands of Cochin-China, and those lying east of them. It is much to be wondered, that, among other luxuries imported by us from the East, these nests should not have found their way to our tables; but hitherto they are so scarce in England, that they are kept as rarities in the cabinets of collectors.

The following is the account given of the nests of the Esculent Swallow by Sir George Staunton: "In the Cass (a small island near Sumatra) were found two caverns, running horizontally into the side of the rock; and in these were a number of those birds-nests so much prized by the Chinese epicures. They seem to be composed of fine filaments, cemented together by a transparent viscous matter, not unlike what is left by the foam of the sea upon stones alternately covered by the tide, or those gelatinous animal substances that are

found floating on every coast. The nests adhere to each other, and to the sides of the cavern; mostly in rows, without any break or interruption. The birds that build these nests are small gray Swallows, with bellies of a dirty white colour. They were flying about in considerable numbers; but were so small, and their flight was so quick, that they escaped the shot fired at them. The same sort of nests are said also to be found in deep caverns at the foot of the highest mountains in the middle of Java, at a great distance from the sea. The Esculent Swallows feed on insects which they find hovering over stagnated pools between the mountains, and for the catching of which their wide-opening beaks are particularly adapted. They prepare their nests from the best remnants of their food. Their greatest enemy is the kite, which often intercepts them in their passage to and from the caverns. The nests are placed in horizontal rows, at different depths, from fifty to five hundred feet. The colour and value of the nests depend on the quantity and quality of the insects caught; and, perhaps, also on the situation in which they are built. Their value is chiefly ascertained by the uniform fineness and delicacy of their texture; those that are white and transparent being most esteemed, and often fetching, in China, their weight in silver.

“These nests are a considerable object of traffic among the Javanese; many of whom are employed in it from their infancy. The birds, after having spent nearly two months in preparing their nests, lay each two eggs, which are hatched in about fifteen days. When the young birds become fledged, is the proper time to take the nests; and this is regularly done three times a year, and is effected by means of ladders of bamboo and reeds, by which the people descend into the caverns: but when these are very deep, rope-ladders are preferred. This operation is attended with much danger. The inhabitants of the mountains, who obtain a livelihood by collecting the nests, always begin by sacrificing a buffalo. They also pronounce certain

prayers, anoint themselves with sweet-scented oil, and smoke the entrance of the cavern with gum-benjamin. Near some of the caverns a tutelar goddess is worshipped; whose priest burns incense, and lays his protecting hands on every person preparing to descend. A flambeau is, at the same time, carefully prepared, with a gum which exudes from a tree growing in the vicinity, and which is not easily extinguished by fixed air or subterraneous vapours."

THE BLACK MARTIN, OR SWIFT*.

The legs of the Swift are so short, that the actions of walking and rising from the ground seem very difficult to it. Providence, however, has made the bird ample compensation, by furnishing it with means, in a peculiarly great extent of wing, for an easy and long-continued flight. It passes more of its time on wing than any other swallow, and its flight is more rapid. It breeds under the eaves of houses, in steeples, and other lofty buildings; and makes its nest of grass and feathers.

The feet of this bird are of a peculiar structure, all the toes standing forward. The least toes consist of only one bone; the others of two each; in which they differ from the toes of all other birds. This, however, is a construction nicely adapted to the purposes for which the feet of these birds are employed.

The Swift visits us the latest, and leaves us the earliest, of any bird of its tribe: it does not often arrive before the beginning of May, and seldom remains later than the middle of August.

It is the most active of all birds; being on wing, in the height of summer, at least sixteen hours in the day; withdrawing to rest, in the longest days, about a quar-

* SYNONYMS. *Hirundo Apus. Linn.*—Martinet noir. *Buff.*—Devilling. *Bewick.*—*Bew. Birds, p. 259.*

ter before nine in the evening, some time after all the other day-birds are gone. Just before they retire, large groups of Swifts assemble high in the air, screaming, and shooting about with wonderful rapidity. They are chiefly alert in sultry, lowering weather; when they express great alacrity, and seem to call forth all their powers.

In hot mornings, the Swifts collect together, in little parties, and dash round the steeples and churches, squeaking at the same time in a very clamorous manner. These are supposed to be the males serenading the sitting hens; as they seldom make this noise till they come close to the walls or eaves, and as those within always utter in return a faint note of complacency. When the hen has been occupied all the day in sitting, she rushes forth, just before it is dark, to relieve her weary limbs. She snatches a scanty meal for a few minutes, and then returns to her task of incubation.

Swifts, when shot while they have young-ones, are found to have a little cluster of insects in their mouths, which they pouch and hold under their tongue. In general, they fly and feed higher in the air than any other species. They also range to vast distances; for motion is but a slight labour to them, endowed as they are with such wonderful powers of wing. Sometimes, however, in the summer, they may be observed, for many successive hours, hawking very low, over pools and streams, in search of the cadew-flies, May-flies, and dragon-flies, which frequent the banks and surface of waters, and which afford them a plentiful nourishment. Sometimes they pursue and strike at birds of prey when they are sailing about in the air; but they do not express so much vehemence and fury on these occasions as the swallows.

Swifts differ from all the other British hirundines, in breeding but once in the summer, and in producing no more than two young-ones at a time.

The main body of these birds retire from this country before the middle of August, generally by the tenth,

(which is but a short time after the flight of their young-ones,) and not a single straggler is to be seen on the twentieth. This early retreat is totally unaccountable, as that time is often the most delightful in the year. But, what is yet more extraordinary, they begin to retire still earlier in the most southerly parts of Andalusia; where they cannot be influenced by any defect of heat, or even (as one would suppose) of food. This is one of those incidents in natural history, which not only baffle our researches, but also elude our conjectures.

In the month of February, 1766, a pair of Swifts were found adhering by their claws, and in a torpid state, under the roof of Longnor Chapel, in Shropshire: on being brought to the fire they revived, and moved about the room.

The voice of the Swift is a harsh scream; yet there are few ears to which it is not pleasing, from an agreeable association of ideas, since it is never heard but in the most lovely weather of summer. These birds never, unless by accident, settle on the ground, from the difficulty they have in walking, or rather (as it may be called) in crawling; but they have a strong grasp with their feet, by which they readily cling to walls and other places that they frequent. Their bodies being flat, they can enter a very narrow crevice; and where they cannot pass on their bellies, they will turn up edgewise to push themselves through.

OF THE PIGEON TRIBE IN GENERAL.*

The Pigeons constitute a tribe that forms a connecting link between the passerine birds and the poultry.

* These birds have a weak, slender bill, straight at the base; with a soft protuberance, in which the nostrils are situated. The legs are short, and in most of the species red; and the toes are divided to the origin.

They are much dispersed over the world, some of the species being found even in the arctic regions. Their principal food is grain: they drink much; and not at intervals like other birds, but by a continued draught, like quadrupeds. During the breeding-time they associate in pairs, and pay court to each other with their bills. The female lays two eggs, and the young-ones are, for the most part, a male and a female. They usually breed more than once in the year; and the parent birds divide the labour of incubation by sitting alternately on the eggs.

Both the male and female assist in feeding their offspring. This, in most of the species with which we are acquainted, is done by means of a substance secreted in the crop, which in appearance is not unlike curd, and is analogous to milk in quadrupeds. During incubation, the coats of the crop are gradually enlarged and thickened, like what happens to the udders of female quadrupeds during the time of uterine gestation. On comparing the state of the crop when the bird is not sitting, with its appearance on these occasions, the difference is found to be very remarkable. In the first case it is thin and membranous; but when the young-ones are about to be hatched, it becomes thicker, and takes a glandular appearance, having its internal surface very irregular. Whatever may be the consistence of this substance when just secreted, it probably very soon coagulates into a granulated white curd; and in this form it is always found in the crop. If an old Pigeon be killed just when the young-ones are hatching, the crop will be found as above described, having in its cavity pieces of white curd mixed with the common food of the bird, such as barley, peas, or grain. The young Pigeons are fed for a little while with this substance only: about the third day some of the common food is to be found along with it. As the Pigeons grow older, the proportion of common food is increased; so that by the time they are seven, eight, or nine days old, the secretion of the curd ceases

in the old ones, and of course no more is found in the crop of the young. It is a curious fact, that the parent pigeon has, at first, power to throw up this curd without any mixture of common food; although, afterwards, both are thrown up, in the proportion required for the young-ones*.

THE WILD PIGEON, OR STOCK-DOVE†.

Multitudes of Wild Pigeons visit this country in the winter, from their more northerly summer retreats. They appear about November, and again retire (except a few that breed with us) in the spring. While the beech woods were suffered to cover large tracts of ground, these birds used to haunt them in myriads, frequently extending above a mile in length, as they went out in a morning to feed. They are, however, still found, in considerable quantity, in many parts of our island; forming their nests in holes of rocks, and old towers, and in the hollows of trees; but never, like the ring-dove, on the boughs.

In a state of domestication, these Pigeons are known to breed eight or nine times in the year; and though only two eggs are laid at a time, their increase is so rapid and prodigious, that, at the expiration of four years, the produce, and descendants, of a single pair, may amount to the immense number of nearly 15,000.

* What is here termed curd, is not literally such, but is so called from its much resembling that substance in appearance. *Hunter on Anim. Econ. p. 235.*

† DESCRIPTION. This bird is of a blueish ash-colour: the breast is dashed with a fine changeable green and purple; and the sides of the neck are of a shining copper-colour. Its wings are marked with two black bars; one on the coverts, and the other on the quill feathers. The back is white, and the tail barred near the end with black. The usual weight is about fourteen ounces. *Pennant.*

SYNONYMS. *Columba Oenas. Linnæus.*—Pigeon sauvage. *Buff.*—Rockier. *Montagu.*—*Bew. Birds, p. 267.*

The usual way to entice Pigeons to remain at a required spot, is to place what is called a *salt-cat* near them. This is composed of loam, old rubbish, and salt, and will so effectually answer the purpose as to decoy even those which belong to other places; it is on this account held illegal.

We have a singular anecdote of the effect of music on a Pigeon, related by John Lockman, in some reflections concerning operas, prefixed to his musical drama of *Rosalinda*. This person being at the house of Mr. Lee, a gentleman who lived in Cheshire, and whose daughter was a fine performer on the harpsichord, he observed a Pigeon, which, whenever the young lady played the song of "*Speri si*" in Handel's opera of *Admetus*, (and this only,) would descend from an adjacent dove-house to the room-window where she sat, and listen to it apparently with the most pleasing emotions; and when the song was finished, it always returned immediately to the dove-house.

There are upwards of twenty varieties of the Domestic Pigeon; and of these the *Carriers* are the most celebrated. They obtained their name from their being sometimes employed to convey letters and small packets from one place to another.

It is through attachment to their native place, and particularly to the spot where they have brought up their young-ones, that they are thus rendered useful to mankind. The bird is conveyed from its home to the place whence the information is intended to be sent; the letter is tied under its wing, and it is let loose. From the instant of its liberation, its flight is directed through the clouds, at an amazing height, to its home. By an instinct altogether inconceivable, it darts onward, in a straight line, to the very spot whence it was taken; but how it can direct its flight so exactly, will probably for ever remain unknown to us.

These birds are not now rendered of the same use as formerly, in carrying letters from governors in besieged

cities to generals about to relieve them; from princes to their subjects, with tidings of some fortunate event; or from lovers to their mistresses, with the dictates of their passion; nor, since the executions at Tyburn have ceased, will they again be let loose the moment the fatal cart is drawn away, to notify to distant friends the departure of the unhappy criminal.

The rapidity of their flight is very wonderful. Lithgow assures us that one of them will carry a letter from Babylon to Aleppo (which, to a man, is usually thirty days' journey) in forty-eight hours. To measure their speed with some degree of exactness, a gentleman some years ago, on a trifling wager, sent a Carrier-pigeon from London, by the coach, to a friend at Bury St. Edmund's; and along with it a note, desiring that the Pigeon, two days after its arrival there, might be thrown up precisely when the town clock struck nine in the morning. This was accordingly done; and the Pigeon arrived in London, and flew into the Bull-inn, in Bishopsgate-street, at half-past eleven o'clock of the same morning, having flown seventy-two miles in two hours and a half.

The Carrier-pigeon is easily distinguished from the other varieties, by a broad circle of naked white skin round the eyes, and by its dark blue or blackish colour.

THE RING-DOVE *.

These Pigeons build their nests on the branches of trees, and generally prefer those of the pine. The nest

* **DESCRIPTION.** The Ring-dove is the largest pigeon which is found in our island, and may at once be distinguished from all others by its size. Its weight is about twenty ounces; its length eighteen inches, and its breadth about thirty. The head, back, and coverts of the wings are of a bluish ash-colour. The lower side of the neck and breast is of a purplish red, dashed with ash-colour. On the hind part of the neck there is a semi-circular line of white; above and beneath that the feathers are glossy, and of changeable colours when opposed to the

is large and open, formed principally of dried sticks ; and the eggs, which may frequently be seen through the bottom of the nest, are larger than those of the domestic-pigeon.

The food of this, as well as of the other species, is principally grain : but a neighbour of the Rev. Mr. White, of Selborne, shot a Ring-dove, as it was going to roost ; and when his wife had picked and drawn it, she found its craw stuffed with a collection of the tender tops of turnips. Hence we may see that granivorous birds, when their usual kinds of subsistence fail, can feed on the leaves of vegetables. There is indeed reason to suppose that they would not long be healthy without these substances ; for turkeys, though corn-fed, delight in a great variety of plants, such as cabbage, lettuce, and endive ; poultry pick much grass ; and geese live for months together on commons, by grazing only.

Attempts have frequently been made to domesticate these birds, by hatching their eggs in dove-houses, under the common pigeon ; but as soon as the young-ones were able to fly, they always escaped to their proper haunts. Mr. Montagu was at considerable pains in experiments of this nature ; and though he so far tamed them within doors as to have them become exceedingly troublesome, yet he never could produce a breed, either by themselves or with the tame pigeon. Two that were brought up with a male pigeon, were rendered so tame that they would eat out of the hand ; but as they showed no signs of breeding in the spring, they were suffered to fly away, by the window of the

light. The belly is of a dirty white. The greater quill-feathers are dusky ; the rest ash-coloured. Underneath the bastard-wing there is a white stroke pointing downward. *Pennant.*

SYNONYMS. *Columba Palumbus. Linnaeus.*—Pigeon *Ramier.* *Buff.*—Queest, Cushat, or Ring Dove. *Willughby.*—Ring Pigeon. *Latham.*—Wood Pigeon. *Montagu.*—*Bew.* *Birds, p. 270.*

room in which they were confined being left open. It was supposed that the pigeon might induce them to return to their usual place of abode, either for food or to roost; but from that moment they assumed their natural habits, and nothing more was seen of them, although the pigeon remained. This gentleman bred up a curious assemblage of birds, which lived together in perfect amity: it consisted of a common pigeon, a Ring-dove, a white-owl, and a sparrow-hawk; and the Ring-dove was master of the whole.

About the beginning of winter, the Ring-doves assemble in great flocks, and leave off cooing. The multitude thus collected, is so disproportioned to the number which continue in Britain through the whole year, as to render it certain that much the greatest portion of them quit the country in the spring. It is most probable that they go into Sweden and the adjoining countries, to breed; and return thus far southwards in autumn, from being unable to sustain the rigours of that climate in the winter months. They begin to coo in March; soon after which, those that are left among us commence their preparations for breeding.

THE CROWNED PIGEON *.

The wings of the Crowned Pigeon are armed each with a horny excrescence, with which they are able to

* See Plate xv. Fig. 6.

DESCRIPTION. This bird is about the size of a common turkey. Its head is adorned with a most superb circular crest of feathers, standing erect, and composed of loose, unconnected webs, of a fine pale bluish ash-colour. The eyes are lodged in a shuttle-shaped band of black. The lesser coverts of the wings, and the upper part of the back, are of a dark reddish purple: the first greater coverts are white, edged with red; and all the rest of the plumage is of the same colour as the crest.

SYNONYMS. *Columba Coronata*. *Linn.*—Faisan couronné des Indes. *Buff.*

strike a severe blow. These birds are easily rendered tame; and, in the East Indies, they are kept in court-yards, with poultry. They have frequently been brought alive into Europe, where they are justly considered among the greatest ornaments of the menagerie: and one instance has occurred of a female laying eggs, but these were unproductive. In a wild state they breed in the highest trees.

These birds have all the habits of the common pigeons; billing, inflating their breast, and cooing: the noise of their cooing is, however, so loud, as, at times, to resemble rather a bellowing. It is said that M. Bougainville's sailors were greatly alarmed at hearing this noise for the first time, in the wild and unfrequented spots of some of the islands on which they landed: they supposed it to proceed from the savage cries of hostile and concealed natives. The Crowned Pigeons are found in New Guinea, Pulo, and a few of the adjacent islands.

THE PASSENGER PIGEON*.

Passenger Pigeons visit, in enormous flocks, the different parts of North America. In the southern provinces their numbers depend greatly on the mildness or severity of the season: for in very mild weather few or none of them are to be seen. Actuated by necessity, they change their situation in search of acorns, mast,

* **DESCRIPTION.** This species is about the size of the common pigeon. Its bill is black. Round the eyes there is a crimson mark; and the head, throat, and upper parts of the body, are ash-coloured. The sides of the neck are of a glossy, variable purple. The fore part of the neck and breast are vinaceous; and the under parts are of a similar colour, but paler. The tail is tolerably long. The legs are red, and the claws black.

SYNONYMS. *Columba migratoria.* Linn.—Pigeon de Passage. Buff.—Pigeon of Passage. Catesby.—Passenger, or Migratory Pigeon. Penn.

and berries, which the warmer provinces yield in vast abundance. When they alight, the ground is quickly cleared of all esculent fruits; to the great injury of the hog, and other mast-eating animals. After having devoured every thing that has fallen on the surface, they form themselves into a great perpendicular column, and fly around the boughs of trees, from top to bottom, beating down the acorns with their wings; and they then, in succession, alight on the ground, and again begin to eat.

"I think," says Mr. Blackburne, in a letter to Mr. Pennant, "that these are as remarkable birds as any in America. They are in vast numbers in all parts; and have, at times, been of great service to our garrisons, in supplying them with fresh meat, especially at the outposts. A friend told me, that in the year in which Quebec was taken, the whole army was supplied with this subsistence. The way was this. Every man took his club, (for they were forbidden to use their firelocks,) and the Pigeons flew in such numbers, that each person could kill as many as he wanted. They in general begin to fly soon after day-break, and continue till nine or ten o'clock; and again about three in the afternoon, and continue till five or six; but what is very remarkable, their course is always westerly. The times of flying here are in the spring, about the latter end of February or the beginning of March, and they continue their flight every day for eight or ten days; and again in the fall, when they appear at the latter end of July or the beginning of August. The inhabitants catch vast numbers of them in clap-nets. I have seen them brought to the market at New York by sacksful. People in general are very fond of them, and I have heard many say that they think them as good as our common blue pigeon: but I cannot agree in this opinion; the flesh tastes most like that of our queest, or wild pigeon, but it is better. Sir William Johnston told me, that at one shot, with a blunderbuss, he killed *above a hundred and twenty*. I must remark a singular fact: that notwith-

standing the whole people of a town go out *a-pigeoning*, as they call it, they do not, on some days, kill a single hen bird; and on the very next day, not a single cock; (and yet both sexes always fly westerly;) and when this is the case, the people are always assured that there will be a great quantity of them that season."

These Pigeons were so numerous when La Hontan was in Canada, that, he says, the bishop had been compelled more than once formally to *exorcise* them, on account of the damage they committed. Many of the trees are said to have had more pigeons on them than leaves; and for eighteen or twenty days, it was supposed that a sufficient number might have been killed to supply food for a thousand men.

Mr. Weld, who some years ago travelled through the states of North America, informs us that a gentleman of the town of Niagara assured him, that once as he was embarking on board a vessel for Toronto, a flight of Pigeons was observed coming from that quarter; that, as he sailed over the lake Ontario to Toronto, forty miles distant from Niagara, Pigeons were seen flying over-head, the whole way, in a direction contrary to that in which the vessel proceeded; and that, on his arriving at the place of his destination, the birds were still observed coming from the North, in as large bodies as had been noticed at any time during the voyage. Supposing, therefore, that the Pigeons moved no faster than the vessel, the flight, according to this gentleman's account, must have extended at least eighty miles.

During their migrations, these Pigeons are very fat. It is a singular fact, that Mr. St. John found in the craw of one of them some undigested rice, when the nearest rice-fields were at least 560 miles from his habitation. He naturally concluded that either they must fly with almost the celerity of the wind, or that digestion must be in a great measure suspended during their flight.

The Indians often watch the roosting-places of these birds; and, knocking them on the head in the night, bring them away by thousands. They preserve the oil,

or fat, which they use instead of butter. There were formerly few Indian towns in the interior of Carolina, where a hundred gallons of this oil might not at any time be purchased.

By the Europeans they are generally caught in nets extended on the ground, to which they are allured by tame pigeons of their own species, that are blinded, and fastened to a long string. The short flights and repeated calls of the shackled birds, never fail either to excite their curiosity, or bring some of them down to attempt their relief, when they are immediately enclosed. Every farmer has a tamed Pigeon in a cage at his door all the year round, to be ready against the season of their flight.

M. du Pratz, when he was in America, placed under the roosting-trees of these Pigeons, vessels filled with flaming sulphur, the fumes of which brought them to the ground in immense numbers.

END OF VOL. II.

